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THE MADRAS MONTHLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ESSAYS.

ART. I.—*Case of Rhinoplasty.* By Surgeon-Major P. G. FITZGERALD, M. D., F. R. C. S. I., Surgeon Fourth District, Madras.

A CASE of rhinoplasty which I lately read in some periodical, in which the nose was restored by flaps taken from the cheeks,—not from the skin merely, but the whole thickness of the cheeks,—has brought to my recollection a little operation, identical in principle, although different in details, which I performed so long ago as the year 1848. As I have preserved the notes of it, I think it may not be without interest even at this time.

In the month of March, 1848, a young native woman was admitted into the Detail Hospital at Kamptee, whose right ala nasi, and a little of the left, had been cut off about an hour before by her husband in a fit of jealousy. The knife had also cut the right cheek from the nose to the malar bone. Having sewn up the latter wound, I proposed to the patient to close the wound in the nose, while it was still fresh, by a flap taken from the upper lip, but she refused to submit to the operation, and the edges were allowed to heal in the ordinary manner. However, when her wounds were healed, and she was preparing to leave the hospital,

I desired the Apothecary to get her a looking-glass, so that she might make her toilet as becoming as she could,—for she had been pretty. At my next visit to the hospital, I found her willing to submit to any operation that would close the hideous chasm in her face; so I arranged to do it next morning with the assistance of Doctors Beetson and Sturrock. Chloroform had not then reached India, nor was the apparatus for giving æther procurable at Kamptee.

The margins of the nasal wound were first pared, leaving it of a triangular form, the upper and lower sides of which met where the root of the ala joined the cheek. At this point, the first incision commenced, and was carried downwards and a little forwards towards the mesial line through the entire thickness of the lip into the mouth. The second incision began a little higher, and about half an inch behind the first, and was carried straight down to the mouth, a little in front of the commissure of the lips. The flap thus formed was raised up and detached for about half an inch from the maxillary bone. The cut edges of the lip were then brought together by needles (two were sufficient), and the twisted suture, which quite controlled the bleeding from the coronary artery. Next, the lower edge of the flap, which had formed the free margin of the lip, was pared of its mucous membrane, and the flap twisted about a quarter of a circle, so that its edges were accurately applied to the margin of the nasal opening, to which it was attached by five points of interrupted suture. The mucous membrane and skin were brought into contact along its *lower* or free border by two points of suture. A bit of hollow reed surrounded by a piece of oiled lint was inserted into the right nostril to support the flap without impeding respiration.

From this description it will be seen that the flap was left adherent to the cheek at its *upper* end, which in its new position became the *outer* end. The case did well. The edges of the wound in the lip united by the first intention, as did also those of the flap to the margin of the nasal wound. The patient left the hospital in about three weeks very much improved in appearance. The chief advantage of this operation lies in the absence of all danger of mortification, which is so apt to happen where a flap of skin alone is formed. The mucous membrane investing its under surface, and thus forming a natural lining to that portion of the nasal cavity, may also be mentioned as

an advantage which is secured only by this mode of operating. The operation just described is of course not applicable in cases of total loss of the nose, but if there should be a wide mouth with a large and loose upper lip, I think a flap might be taken from each side of the lip to supply the loss of both alæ nasi. A French Surgeon, M. Bonnet of Lyons, was the first to suggest this mode of replacing lost portions of the nose, but I do not remember whether he ever put it in practice himself. However, I believe the above case to be the first, if not the only instance of the operation having been performed in this country.

ART. II.—*On the Subcutaneous Injection of Quinine.* By W. E. WRIGHT, ESQ., Acting Zillah Surgeon, Guntoor.

SOME few months ago a paragraph appeared in the newspapers advocating the subcutaneous injection of quinine in cases of malarial fever. The practice is not new, and I believe many practitioners have given it a trial, but there have been certain objections to its use that have prevented its general adoption; such as unpleasant after-effects, and the difficulty of procuring a strong enough solution without an excess of acid, and it is not at all stations that a medical officer may have the necessary syringe and needle for the purpose.

In the paragraph noticed it was recommended that five grains of quinine should be dissolved in dilute sulphuric acid and injected under the skin on the back of the shoulder. I felt satisfied that the injection of a solution of this kind would be injurious, so I tried the effect of it on a pariah dog with the result of producing a large ulcer on his back. After this experiment I did not venture to try this solution on the human subject, but I tried various expedients to obtain a less acid but still a strong solution by neutralizing the excess of acid, but I found at one time the quina was precipitated, and at another the solution was too weak. It afterwards occurred to me that hydrochloric acid would be less noxious to the tissues than sulphuric acid, and I at length obtained a solution sufficiently concentrated and only moderately acid.

During the last season malarial fever has been very prevalent in the Kistna District, and many cases have presented themselves at the Guntoor Civil Dispensary. Among the police I have had special opportunities of seeing the disease, as many of the force come in from the Palnad and other feverish parts, suffering from all types of the fever. The following are brief records of some cases treated by quinine injected subcutaneously. They were all well marked cases, and were kept under close observation, and the effect of the treatment was carefully watched.

CASE 1.—Mahomed Nacky, Æt. 25, had contracted fever in the Palnad, and suffered from it for a month. At first it was quotidian, but latterly became tertian. 4½ grs. of quinine were injected under the skin of the arm. He had no attack since, and was discharged from hospital a week after the injection.

CASE 2.—Abdool Cawder, Æt. 32, suffered severely from ague for five days. 5 grs. of quinine were injected while the fever was on him. He suffered from fever the greater part of the same day, but it left him at night. There was no return of it the next day, nor did it recur at all subsequently.

CASE 3.—Omer Khan had suffered from tertian fever for five weeks. 5 grs. were injected, and the paroxysms were checked. He says he suffered slightly from fever on the seventh day after the injection, but has since been discharged, there being no return of the attack.

CASE 4.—Mahomed Esoph, Æt. 19, had had ague every day for a fortnight. 5 grs. were injected, and there was no return of the fever.

CASE 5.—Jaffa Cawer, Æt. 35, had also had ague every day for a fortnight. 5 grs. were injected, and he was discharged from hospital eight days afterwards, there having been no return of the fever.

CASE 6.—Mahomed Yarkoo, Æt. 40, a weak and sickly looking man, said that he had suffered every day from ague for nearly three months. The attacks did not appear to be very severe, but were of long duration. 5 grs. were injected. He suffered from fever the same evening, but when it left him it did not return. This man was recommended leave on account of his general ill health.

CASE 7.—Kassim Khan had suffered from fever every day for ten days, he was also suffering from bronchitis. 5 grs. were injected, and the ague paroxysms were entirely checked, but he was admitted into hospital for the bronchitis, which became worse, and had febrile symptoms connected with it, but I believe the ague is cured.

CASE 8.—Soobramanbroo, Æt. 14, said he had had fever daily for three months. 3 grs. of quinine were injected. There was no return of the fever after the injection, but he felt, as was interpreted to me, a curious sort of feeling at the time the fever ought to have come in. He came daily to the Dispensary for a few days, but has since left the station. The Dresser tells me he hears he has been free from fever since.

CASE 9.—Abdool Razak, Æt. 13, suffered from fever every third day for one month past. 3 grs. were injected in the morning of the day the fever was due. The paroxysm did not come on at the expected time, but was postponed fourteen hours, and was milder than usual when it did come. There was no subsequent return of the fever.

CASE 10.—Yenkatanaidoo, Warder at the Jail, had ague for three days. The fever came on about 10 A. M. daily. 5 grs. were injected at seven A. M.; the fever came on at the usual time, but with scarcely any cold stage. The attack left him and has not returned since.

CASE 11.—Paupado, Æt. 40, convict in jail, had ague for two days. 5 grs. were injected, and there was no return of the fever. There was some pain about the seat of injection for a few days, and a hard lump remained at the part for nearly three weeks after the fever was cured.

CASE 12.—Ayapen, Æt. 35, a travelling beggar, said he had had fever for three months; for the first two months every day, for the last month every other day. He was admitted into hospital, and it was noticed that the attack did come on at the time expected. 4½ grs. were injected on the morning of the day; free from fever. He had no fever the next day, nor afterwards.

CASE 13.—A young Brahmin writer suffered from a dangerous attack of remittent fever. During the illness he must have taken at least ½ oz. of quinine by the mouth. During convalescence he suffered from an irregular type of intermittent fever. He, however, had no fever after 4 grs. of quinine had been injected subcutaneously.

The above cases are not selected simply because they were successful, but because they are good examples of the cases treated. The fact is, I have no unsuccessful case to record. The only unpromising feature in them is that most of them complained of some pain about the seat of injection for a few days. In some cases there was slight swelling, and in case 11 a hard lump remained at the part for nearly three weeks. But these are minor evils. A method may be discovered of dissolving the drug, so that it shall be free from even these objections, but I think they are more dependent upon the quinine itself than the hydrochloric acid used to dissolve it.

It appears to me to matter very little when the injection is administered, but perhaps the best time would be when the remission has fairly set in and the patient is free from fever. Case 2, it will be observed, was injected while the fever was on him. It exerted no effect upon the paroxysm, but then the fever did not return after remission. In some cases, if the quinine is injected only a few hours before the expected attack, it fails to check this attack, but still exerts its influence in preventing the one after. It is probable that the paroxysm has already commenced in the system before the symptoms actually occur.

This mode of administering quinine I consider applicable to fevers of malarial origin, whether of recent or long duration, but I do not anticipate any good result from its use in febricula or slight fevers depending upon stomachic or other causes.

It may not be out of place here to make a few remarks on the subject of febricula, as I believe much looseness and uncertainty prevails on the subject. Febricula, as its name implies, is, I consider, a term that should only be applied to cases of slight fever, depending upon errors in diet, exposure to the sun, &c.; but it certainly should not be applied to cases of malarial origin. In many diseases perhaps slight fever is only a noticeable symptom, but it is an imperfect diagnosis that will put down a symptom for the disease itself. Cases of fever resulting from malarial poisoning are either agues or remittent fevers; they may be mild or severe, but they are not cases of febricula. The latter is treated by simple and cooling remedies, but against the poison of malaria we have but one antidote. In con-

clusion, I am of opinion that the hypodermic method of administering quinine is by far the most efficient, as a single injection effects a permanent cure; whereas it often happens that large and repeated doses are taken by the mouth before the disease yields to the remedy. It is as economic as it is efficient, and I am satisfied that if the practice were to be generally adopted, it would result in a saving to Government of many thousands of rupees.

NOTE.—In preparing a solution for injection, I make ½ dram of quinine into a paste with a little water. It will be found that from 15 to 20 minims of strong hydrochloric acid will dissolve it, but it will be a sort of thick greenish liquid. This may be further diluted with water, so that the whole amount does not exceed two fluid drams. Lastly, I would suggest to any that feel inclined to give the method a trial, to be at the trouble of preparing this solution themselves, and also injecting the remedy.

ART. III.—*Cases of Snake-bite Continued.* By JOHN SHORTT, M.D., M.R.C.S., &c., Surgeon, Superintendent General of Vaccination, Madras Presidency.

THE following cases of snake-bite have been received, since my last communication, through the kindness of Dr. McKenzie, Inspector General Indian Medical Department.

Dr. Price, Assistant Surgeon in Medical charge of the Civil Dispensary, Kamptee, gives the following case, extracted from the Medical Journal, which is said to have occurred when Assistant Surgeon McClorg was in medical charge of the Institution.

A woman named Gothree, Æt. 25, was bitten by a snake on the ring finger of the right-hand, on the 23rd of September 1869. On the following morning her husband found her lying on her bed in a state of deep sleep. She was senseless and unable to get up from her bed, and a copious frothy saliva was running from the mouth. He first applied some native drugs, and finding no change, he then brought her to the Civil Dispensary on the evening of the 24th September 1869, at about 7 P. M., 18 hours after the acci-

dent. On her admission she was almost moribund, and died in about one hour and a half after coming into the hospital.

Treatment. Liq. Ammoniæ ♏ x, Ipecac. Rad. (?) Aquæ ℥ ss.

To be given immediately, and to be repeated every half hour.

Externally, Liquor Ammoniæ and Ipecac. Rad. contrit. into a paste applied over the bitten part.

Civil Assistant Surgeon J. Barter, from Seeonee, relates the case of a Gond female labourer, aged 35 years, who was bitten on the left hand on the 4th April, 1870, at 12 o'clock noon, by a (*Nag.*) cobra of a brown colour, whilst the deceased was sleeping in her house in the village of Kuttungheeree. Half an hour after being bitten she became insensible, and died at 1 P.M. on the same day, so that she was only ill for one hour, and no treatment was applied.

Apothecary R. Hufton, in medical charge of the station of Chutterpore, submits the following extract of a case of snake-bite treated successfully by 2nd Class Hospital Assistant N. Vurdarajooloo in the Fever Hospital at Ganjam. In the month of September, 1869, a healthy, robust individual, of about 24 years of age, by profession a labourer, while engaged in removing some overgrown vegetation in the compound of his master, situated a few yards from the Ganjam Fever Hospital, unwittingly severed a portion of the tail of a snake. Immediately after a large cobra, distinguished by its hood, raised itself to about the height of two or three feet, and bit him in the space between the metacarpal bones of the thumb and index finger of the left hand.

The man instantly came running to the hospital, tightly compressing the part a little above the wound, and on examination I found two punctures made by the teeth of the reptile, from which there oozed a little blood. These wounds I immediately enlarged with a lancet, and allowed them to bleed freely until they ceased, which occupied about ten minutes. Gave him a draught of Aromatic Spirit of Ammonia and laudanum, and applied a paste made up of Liquor Ammoniæ and charcoal to the parts, removing at the

same time the pressure applied above the wounds. At this time he had no pain in the wound, but about half an hour after he appeared much depressed in spirits, complained of numbness of the whole arm, head and tongue, and a portion of the pod of a chilli when chewed by him did not appear to produce its proper action upon the sensibility of the mouth and tongue, as he stated it was insipid. At this time another draught of ammonia and laudanum was given to him, friction of turpentine was vigorously applied to the whole limb, he was made to inhale the vapour of ammonia from a smelling bottle frequently, which produced a large discharge of tears, and his mind was diverted from his condition by drawing his attention to some games that were being performed in front of the hospital at the time. Shortly after this he perspired freely over the whole body, and in the course of four hours after he was bitten, he returned to his house perfectly cured, and resumed his work on the following day.

The treatment in this case was from its commencement to its termination witnessed by many of the residents of Ganjam.

ART. IV.—*Annual Report of the Government Lying-in Hospital, Madras, for the year* 1869. By Prof. W. H. HARRIS, M.D., Superintendent of the Hospital.

(Communicated by the Inspector General Indian Medical Department.)

Delivered in Hospital, including abortions				1328	
Delivered on the way to Hospital, or brought in immediately after delivery				35	
Died undelivered				3	
			Total...		1366
I.—NATURAL...	1. *Purely natural.* ...	.....	...	1125	
	2. *Varieties* ...	Face.....	(1)	3	
		Head and hand.....	(1)	2	
					1130
II.—DIFFICULT	1. *Tedious.* ...	.....	...	13	
	2. *Laborious*....	Forceps.....	39		
		Turning.....	(1) 4		
		Craniotomy (Face 1)	8		
		Incision of Os..... ...	1		
		Occlusion of Os, dilatation by Tents...	1		
				53	
					66
III.-PRETERNATURAL.....	1. *Inverted* ...	Breech.....	(7) 19		
		Foot.....	(8) 15		
				34	
	2. *Transverse*...	Upper extremity.....	(7) 13		
				13	
	3. *Compound* ...	Arm and feet.....	1		
		Hand and side.....	1		
		Arm, foot and funis.	(1)		
		Head, foot, and hand with Accidental Hæmorrhage.....	(1)		
				2	
					49
IV.—COMPLEX.	1. *Plural Births.*	Twins.....	(6) 11		
				11	
	2. *Hæmorrhage.*	Accidental Hæmorrhage.....	11		
		Unavoidable....	6		
		Post Partum.....	7		
				24	

Class.	Division.	Sub-division.			
IV.—Complex..	3. *Retained Placenta.*	Morbid adhesion (Twins 1).....	5		
		After abortion.....	(12)		
				5	
	4. *Convulsions..*	Apoplectic...	1		
		Epileptiform....	19		
				20	
	5. *Prolapsed Funis.*	With head presenting.....	1		
		With placenta prævia.....	(1)		
		With foot, hand and Acc. Hæmorrhage	(1)		
		With foot.....	1		
		With arm.....	2		
		With arm and foot (Twins).....	1		
		With arm (Twins)...	1		
		With foot (Twins)...	1		
		With breech (Twins).	1		
				8	
	6. *Ruptured Uterus, &c.*	Ruptured Uterus.....	2		
		Ruptured Uterus & Vagina...	1		
		Ruptured Vagina....	5		
				8	
	7. *Other complications.*	Collapse.....	3		
		Urgent Dyspnœa.....	1		
		Valvular Disease of Heart.....	1		
				5	
					81
	Diseases of Pregnancy.				
	Abortion, &c...	Abortion.....	28		
		Do. with retained placenta... .....!.....	12		
				40	40
				Total.....	1366

Obstetric Operations.

Class.	Division.	Sub-division.			
Forceps...	*Difficult labour.*	Head presenting.....	39		
		Head (after version)	2		
				41	

CLASS.	DIVISION.	SUB-DIVISION.			
FORCEPS.....	*Preternatural...*	Shoulder, (after version).....	(3)		
		Do. (after Decap.)	(1)		
		Foot.....	1		
				1	
	Complex labour.	Puerperal Convulsions.....	10		
		Ruptured Vagina....	2		
		Do. (Perforation)	1		
		Urgent Dyspnœa....	1		
		Placenta Prævia.....	1		
				15	
					57
VERSION.....	*Difficult.....*	Head presenting.....	2		
		Do. and hand.....	1		
		Do. (Forceps failed, Cran. after ver.)...	(1)		
				3	
	Preternatural...	Shoulder.....	3		
		Do. side..... ...	1		
		Do. (Head extracted by forceps)	3		
		Do. (do. by craniotomy).....	1		
				8	
	Complex labour.	Arm and funis.....	2		
		Do. (Twins)...	1		
		Placenta Prævia.....	1		
		Rupd. Uterus and Vag. (Cran. after ver)	1		
		Head and funis (Forceps failed).....	1		
				6	
					17
CRANIOTOMY.....	*Difficult labour.*	Head presenting.....	7		
		Face do	1		
		Head (after version).	1		
				9	
	Preternatural labour.	Shoulder (after version)	(1)		
		Foot (after extraction of body).....	2		
				2	
	Complex labour.	Placenta Prævia.....	2		
		Rupd. Uterus and Vagina (1 after version).....	(1) 2		
		Puerperal Convulsions.....	1		
		Abortion.....	1		
				6	
					17

Class.	Division.	Sub-division.			
Evisceration...	*Preternatural*.....	Shoulder.....	2		
		Do. Decapitation and Forceps.....	1		
				3	
					3
Extraction of Head. ...	*Preternatural*...	Breech.....	2		
		Foot.....	1		
				3	
					3
Extraction by Feet. ...	*Preternatural*...	Foot.....	1		
		Do. (forceps).....	(1)		
		Arm and feet.....	1		
				2	
	Complex. ...	Foot and funis.....	1		
		Do. Head, hand and funis.....	1		
				2	
					4
Gastrotomy. ...	*Complex.*	Ruptured Uterus.....	2		
				2	
					2
Induction of Premature Labour.	*Complex.* ...	Apoplexy.....	1		
				1	
Do. of Abortion.	*Abortion.* ...	Fatty mole and Hæmorrhage	1		
		Putrid Fœtus..	1		
		Acute Bronchitis....	1		
				3	
					4
			Total.... .		107

Note.—The figures between brackets refer to the number of similar labours in other divisions.

The number of deliveries exhibited in the tabular returns of the Lying-in Hospital for the year 1869, viz. 1366, precisely corresponds with that of the preceding year, but exceeds the average of the five previous years by 152. The increase would doubtless have been still greater but for an outbreak of Puerperal Fever in August, and a severer one at the end of November, which necessitated the admissions being restricted to those applicants only who were actually in labour. The smallest number of deliveries in any month was 84, in March; and the largest 148, in September.

The proportion of morbid labours is almost as great as in 1868, being only 8 less if all varieties are included, and the frequency of almost every form will be found greatly in excess of that given in ordinary Obstetric Records. The influence of this cause upon the death-rate is of course considerable, but another element, overcrowding, must, I think, be charged with a very considerable share of the mortality during the past year.

RACES & CASTE.—The following are the Races and Caste of the women who were delivered, and the figures show the increased proportion is almost entirely confined to the Hindoos and Mahomedans, while the number of admissions of Europeans and East Indians is proportionately diminished.

	1868.	1869.
Europeans	16	12
East Indians	144	117
Mahomedans	18	23
Hindoos	194	217
Pariahs...	994	997

DELIVERIES & THEIR CLASSIFICATION.—1363 women were delivered in Hospital or brought in shortly after delivery, and three died undelivered. Of the above, 40 were abortions before the completion of the seventh month of gestation, and the remaining 1323 include four cases of morbid adhesion of the placenta, brought in after birth of the child in consequence of the native midwives being incompetent to complete delivery. Of these 1323 deliveries, 182 were between the seventh and ninth months, and 1141 at or near the full time. They are distributed under the several classes of labour as follows :—

Natural...	1,130, or 85·5	per cent.
Difficult	66, or 5·00	„
Preternatural ...	49, or 3·70	„
Complex	78, or 5·74	„

I. NATURAL LABOUR.

The ages, number of the pregnancy, and duration of labour in the above 1130 Natural Labours, are given in the following tables.

Ages of Women...	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Number of Women	8	48	26	65	60	100	36	93	33	146	92	90	72	58

Ages of Women	29	30	31	32	33	34	35	36	37	38	39	40	above 40	Total.
Number of Women	54	69	15	22	3	18	7	4	2	3	4	2	1	1130

Number of Pregnancy ...	1	2	3	4	5	6	7	8	9	10	11	12	15	16	17	Total.
Number of Women... ...	247	219	204	144	116	75	58	27	20	10	6	1	1	1	1	1130

Hours in labour... ...		1—2	2—3	3—4	4—5	5—6	6—12	12—18	18—24	Unknown	Total.
No of Women..	Europeans and East Indians..	2	7	10	15	16	45	6	2	1	104
	Natives ...	6	38	118	190	181	416	47	16	14	1026

So few of the class of native women who resort to this Institution are able to afford any information respecting their Ages, that an approximate age has been taken by calculating from the period of puberty, which often seems to be the only event in their past lives of which they retain any distinct idea as to time, and assuming 14 years to be the average age at which the catamenial function is first established in this country.

This method shows a somewhat different result from that arrived at last year, when the Ages were determined in a more hap-hazard way, but still the proportion of births occurring in the decennial period from 20 to 30 years of age, is extremely high, viz. 69 per cent. The percentage of births during the successive quinquennial periods is here shown.

Age	15—19	20—24	25—29	30 and above
Per cent.	18	36	33	13

The Number of the Pregnancy is shown in the second table, by which it appears that 247, or nearly 22 per cent. were pregnant for the first time; 37·5 per cent. for the second or third time; and that the ratio of the three first pregnancies to all others is 60 per cent.; 29 per cent. were delivered in their fourth, fifth, or sixth pregnancy; and the number pregnant more than six times was only 11 per cent.

The average Duration of natural labour may be calculated from the third table. The total number of hours, divided by the number of labours in which the duration was noted,

1115, will give about $7\frac{1}{3}$ as the average of each. Only 4·7 per cent. were terminated within three hours; 47·5 per cent. between three and six hours; nearly 40 per cent. between six and twelve hours; and 6·5 per cent. above twelve hours.

Comparing Europeans and East Indians with Natives, the average duration of *natural* labour is found to be almost precisely the same, viz. $7\frac{1}{2}$ hours in each.

The proportion of head presentations, including 4 face, was 93·3 per cent.; the ratio of the latter was 0·35 per cent.

The death-rate of Natural Labour was 1·061 per cent., or 1 in $94\frac{1}{4}$.

II. DIFFICULT LABOUR.

The sixty-six cases of Difficult Labour are sub-divided as follows:—

α. ORDER I.—TEDIOUS LABOUR.

Only thirteen cases are recorded—less than one per cent. The following table exhibits the ages, number of the pregnancy, and the duration of labour respectively.

Ages of Women	16	18	19	20	21	25	26	30	35	36	Total.
Number of Women	1	2	1	3	1	1	1	1	1	1	13

Number of Pregnancy	1	2	3	8	10	Total.
Number of Women	8	1	2	1	1	13

Hours in labour	24—30	36—42	42—48	Total.
Number of Women	5	5	3	13

The only point worthy of note, is the large proportion of primiparæ, 61·5 per cent.; and as the ratio of primiparæ to all others is less than 22 per cent., it appears that Tedious Labour is nearly six times as liable to occur in a primiparous as in a multiparous woman. This conclusion corresponds closely with the results of the preceding year.

The death-rate of Tedious Labour is *nil.*

11 Children (7 males and 4 females) were born alive, and 2 (males) still-born.

β. ORDER II.—LABORIOUS LABOUR,

In which manual or instrumental assistance was afforded, includes 53 labours, or 4·00 per cent. Of these, 39 were

delivered by Forceps, 4 by Version, 8 by Craniotomy, and 2 required incision or artificial dilatation of the os and cervix uteri. This is exclusive of certain preternatural and complex labours, in which forced delivery was called for. The proportion of Forceps deliveries is greater still than last year. Atony of the uterus is the most common cause necessitating the use of instruments, and when deformity occurs, it is usually slight. Shortness or coiling of the funis seems to be a more frequent cause of difficult labour than is generally supposed, and I am disposed to class cases of this description with complex, rather than with difficult labours, owing to the extreme peril to which the child is exposed, unless delivery is speedily accomplished artificially, or uterine action becomes suspended. Oxytoxics, which are not infrequently resorted to in such cases, when plenty of room is available, must necessarily effect the certain destruction of the child if tonic contraction of the uterine fibres be induced, for thus, a continuous strain upon the cord being maintained, the fœtal circulation becomes either greatly interfered with or entirely interrupted.

In four cases, the deformity was great enough to render delivery by forceps impossible or incompatible with the preservation of the child's life, and after tentative efforts had failed, Version was resorted to with the happiest results, the child being extracted alive in three instances. The amount of narrowing of the pelvic brim in these cases was computed to be from $\frac{1}{4}$ to $\frac{3}{4}$ of an inch, reducing the conjugate from $3\frac{3}{4}$ to $3\frac{1}{4}$ inches.

In one remarkable case the symphysis pubis separated during delivery by forceps; an accident of extreme rarity, I imagine, from the reticence of writers on the subject, and it may be mentioned in proof of no undue force having been employed, that the child was born alive, which would not have been probable had compression been too severe or too long sustained, or had the compressive force been applied in an improper manner. The preference given to Turning, when the difficulty of delivery by forceps is found to be unusually great, points also to the same conclusion. The woman died from Pyæmia, and the case will be noticed under "Fatal Cases."

The proportion of Forceps deliveries to cases in which Craniotomy was resorted to, is almost double that of the preceding year, 39 to 8; but this was entirely due to the delay in bringing the women to the hospital for aid, and to

the child being undoubtedly dead on admission. The Forceps is not withheld when the process of parturition assumes an unnatural tendency, and its aid is called for; and I cannot call to mind a single instance of harm in any way attributable to what a few years since might have been considered an untimely or unnecessary use of the instrument, but on the contrary, as the results to both mother and child fully bear out, its early use is attended with a considerable saving of life.

The Ages, Number of the Pregnancy, and Duration of Labour, are given below. A primipara is more than twice as likely to require artificial delivery as a multipara.

Ages of Women	16	17	18	20	22	23	24	25	26	27	28	29	30	31	32	34	36	38	Total.
Number of Women. ...	2	3	2	3	1	3	8	3	4	5	3	1	8	1	1	2	2	1	53

Number of Pregnancy	1	2	3	4	5	6	7	9	11	14	Total.
Number of Women	20	6	8	5	3	1	6	1	2	1	53

Hours in labour	6-12	12-18	18-24	24-30	30-36	36-42	54-66	66-78	Total.
No. of Women...	11	13	9	7	6	3	2	2	53

In the subjoined table are shown the mode of delivery, and the result to the mother and child, in both orders of Difficult Labour.

Labour.	Mode of delivery.	Number of cases.	Mother.		Child.				Remarks.
			Recovered.	Died.	Alive.		Still.		
					M.	F.	M.	F.	
Tedious.	Natural powers. ...	13	13	...	7	4	2	...	
Laborious.	Forceps. ...	39	35	4	20	14	4	1	
	Turning....	4	3	1	2	1	...	1	
	Incision of Os.....	1	...	1	...	1	...	...	
	Occlus. dilatation by tents ...	1	...	1	1	...	...	...	
	Craniotomy.....	8	7	1	...	...	3	5	

The death-rate of Laborious Labour is 14·8 per cent, or 1 in $6\frac{3}{4}$. The child was lost in 28 per cent., or 1 in $3\frac{1}{2}$. Excluding Craniotomy, 1 in $6\frac{1}{2}$ children was lost.

III. PRETERNATURAL LABOUR.

There were 49 uncomplicated deliveries in this class, and 24 others which are included with Complex Labours, making 73 instances in which the head was not presenting, or 5·34 per cent. Of the former, 19 were breech, 15 footling, 13 transverse, and 2 compound presentations; and of the latter 7 were breech, 8 footling, 7 transverse, and 2 compound. Altogether, therefore, there were 26 breech, 1 in 51; 23 footling, 1 in 57½; 20 transverse, 1 in 66; and 4 compound, 1 in 330. The proportion of transverse labours is unusually high even for this Hospital.

The result to the mothers and offspring in the above 49 uncomplicated preternatural deliveries is shown in the following table.

Presentation.	No. of cases.	Mother.		Child.		
		Recovered.	Died or removed.	Alive.	Putrid.	Still.
Breech ...	19	19	...	13	3	3
Foot ...	15	15	...	9	2	4
Upper extremity ..	13	12	1	2	1	10
Compound..	2	2	...	...	...	2

The result was favourable to the mother in all but one instance, both in 1868 and 1869. Excluding deliveries in which the fœtus was putrid, in breech presentations 1 in 5⅓ children was lost, in foot 1 in 3¼, and in transverse 1 in 1⅕.

Delivery was effected in the transverse labours in 7 instances by Version, in 3 of which the head was extracted by Forceps, and in 1 by the Crotchet after perforation; in two instances Evisceration, and in 1 Decapitation were employed, and in 3 the child was expelled by the natural powers by spontaneous evolution, the shoulder remaining fixed under the pubic arch. In the majority of the above cases the children were already dead when the women were brought to hospital, which sufficiently explains the unusual mortality of the former.

IV. COMPLEX LABOUR.

The deliveries in this class number 81, nearly 6 per cent. They include the following complications:—Plural births

17, Hæmorrhage 24, Retained Placenta 5 (and 12 after Abortion not included), Convulsions 20, Descent of the Funis 10, Ruptured Uterus or Vagina 8, Other complications 5. Of these numbers, which exceed the total by 20, 8 are shown under more than one division.

The proportion of complex labours is exceedingly high, the majority of the cases being brought to hospital in consequence of the complication having arisen, many in a dying state, and the annual death-rate is thus greatly increased, as pointed out in the Report for 1868.

a. PLURAL BIRTHS.

17 women were delivered of twins, 1 in 89; of these 15 recovered and 2 died; of the children, 14 were males, 20 females; 24 were born alive, 5 still, 4 putrid, and 1 was a blighted fœtus, (fatty mole).

The presentations were :—

Double Cranial.	Head and breech.	Head, breech and funis.	Head and foot.	Head, arm and funis.	Head, foot and funis,	Head, arm foot and funis.
7	5	1	1	1	1	1

The delivery was terminated by the natural powers in all but 2 cases. In one of these, the woman was admitted 5 hours after the birth of the first child, with the left arm and funis of the second child prolapsed, and the child dead. Delivery was effected by version without difficulty. The woman died from Puerperal Fever. In the other, the right arm, feet and funis of the second child were found presenting on admission 3 hours after birth of first child. The child was extracted alive. Another woman was admitted in a state of extreme exhaustion from loss of blood 25 hours after delivery, with the placenta adherent. After extraction of the placenta, bleeding ceased, but death followed in four hours.

In one case, there was Hydramnios, the children were extremely small, and still. In another, the second child was a blighted fœtus, the first being alive. One woman had Puerperal Mania, and was discharged convalescent, and one had Post Partum Convulsions and recovered.

β. Hæmorrhage.

Eleven cases of *Accidental*, 6 of *Unavoidable*, and 7 of *Post-partum Hæmorrhage* came under observation, total 24, 1 in 55 or 1·8 per cent. The proportion of Post-partum Hæmorrhage is low, but of hæmorrhage before delivery considerably higher than usual. From the above are excluded hæmorrhages from adherent placenta and abortion. Two of the cases of Placenta Prævia, and one of Post-partum Hæmorrhage terminated fatally; the proportion of deaths to cases is therefore 1 in 8. In both the cases of Placenta Prævia there had been very considerable hæmorrhage before admission: in the first, it had been going on 33 hours, and the child was putrid; in the other, bleeding had continued for three days, the child was delivered by craniotomy, and death occurred 4½ hours after.

Two cases of secondary hæmorrhage, not included in the above, occurred after natural labour; one on the tenth day, and one on the seventh day after delivery. In the latter the woman was the subject of albuminuria, and she was suffering from great mental anxiety from domestic trouble, being separated from her husband. She ultimately died on the 27th day. One case, also of secondary hæmorrhage, occurred after abortion in the sixth month. The woman had lost a considerable quantity of blood before admission and during delivery; and on the second day after delivery, she was found in an almost hopeless condition, with the bed soaking through with blood, and was removed in a dying state two days after. If these be included, the death-rate from hæmorrhage would be 1 in 5½.

γ. Retained Placenta.

Seventeen cases were admitted with retained placenta. In twelve, abortion had previously occurred, and in five, after delivery at the full term, the placenta was morbidly adherent. All the women were brought to hospital some time after delivery, and most of them had lost a considerable quantity of blood. Death resulted in one case of morbid adhesion, in which the woman had given birth to twins.

δ. Puerperal Convulsions.

Twenty cases are reported during the year: 19 *Epileptiform* and 1 *Apoplectic*, 1 in 66, or 1·5 per cent. This

proportion is ten times greater than that given in ordinary statistics.

The *Apoplectic* case terminated fatally. She was admitted when between six and seven months pregnant, with intermittent fever. On the second morning after admission she was found in a state of insensibility, but whether it was preceded or not by a convulsive paroxysm during the night could not be ascertained. Urine contained merely a trace of albumen, and labour had not set in. Induction of premature labour was commenced the same morning, and the delivery of a female fœtus, alive, was concluded in 15 hours. The fœtus lived only a few hours. The apoplectic coma became very profound, all voluntary power was in abeyance, and she was removed in a dying state by her relatives on the third day after delivery.

Of the 19 cases of *Epileptic* convulsions, 13 recovered, 1 died undelivered, 4 died in hospital after delivery, and 1 was removed in a precarious state and reported as a death. The mortality for this complication, is therefore 1 in $3\frac{1}{6}$, or 31·5 per cent.

Of the children, 12 were males, 4 born alive, 7 still born, and 1 putrid; and 8 females, 4 alive and 4 still.

The ages and number of the pregnancy are given in the following table.

Ages of women.....	17,	18,	19,	20,	21,	22,	24,	30,	34
No. of women.....	3,	5,	2,	3,	1,	1,	3,	1,	1=20

No. of pregnancy....	1,	2,	3,	4,	5
No. of women.... ...	11,	4,	2,	1,	2 =20

As usual, the great majority of cases occur in primiparæ.

Delivery was accomplished in eight cases by natural powers; in ten forceps was used, and in one craniotomy was resorted to. One woman died undelivered 15 minutes after admission.

ε. DESCENT OF THE FUNIS.

This complication occurred in ten instances; 1 in 132, or 0·76 per cent. Some of the cases are referred to under other heads, as the complication is a source of danger only to the child. Four of the cases occurred in Plural Births, and in all but one with some other complication or malposition of the child. The result was fatal to the mother in one

instance: an arm presentation delivered by version, and child putrid; and to the child in six, one being putrid, while four of the children were delivered alive.

The presentations were :—

Presentation.	No. of cases.	Remarks.
Head alone.....	1	Version.
Partial placenta prævia and head.....	1	Craniotomy.
Head, foot and hand....	1	Accidental Hæmorrhage.
Foot (1 Twins).....	2	Extracted.
Arm (1 Twins).	3	Version.
Arm and feet (Twins)..	1	
Breech (Twins)	1	

ζ. Ruptured Uterus and Vagina.

Two cases of Ruptured Uterus, one of Ruptured Uterus and Vagina, and five of Ruptured Vagina, are entered during the year, 1 in 165, or 0·6 per cent.

The ages, number of the pregnancy, and duration of the labours are shown in the following table.

Ages of women	20	21	23	24	25	33	35	Total.
Number of women	2	1	1	1	1	1	1	8

Number of pregnancy	1	2	3	4	6	7	Total.
Number of women...	2	2	1	1	1	1	8

Hours in labour	6—12	12—18	18—24	24—36	66—78	Unknown.	Total.
Number of women... ...	1	1	1	3	1	1	8

The large proportion of cases (half) occurring in the first and second pregnancies, is very unusual.

Six of the cases were admitted after the rupture had taken place. In two, the peritoneum was not involved in the rent, which was confined to the posterior wall of the vagina. The presentation in every case was the head. Delivery was effected by forceps in two, version and craniotomy in one, craniotomy in three, and gastrotomy in two. In five the child was a male, in three a female, still in all. Of the women, one recovered and seven died: two at time of delivery, one in 45 minutes, one in 1¾ hours, one in two hours, one in eight hours, and one in 24 hours after delivery.

The following cases are deemed worthy of record, especially the first two.

Vullyammah, Æt. 33, sixth pregnancy, was admitted into hospital at 9 A. M. 24th December, in a state of complete collapse, pulseless, cold, and gasping for breath, said to have been in labour 13 hours before admission, and membranes to have ruptured at commencement of labour. Pains ceased suddenly nine hours before, but she continued to have semi-involuntary action of the abdominal muscles, causing her to bear down and strain from time to time. Limbs of the child distinctly felt through the abdominal parietes and uterus in a state of firm contraction in the right iliac region, abdomen tender and tympanitic. The head is found in first position high up in the brim, and the margin of a rent in the vagina can be felt on the left side. Brandy was administered, and delivery of a male child accomplished at once by long forceps, the head being perforated after the blades had been adjusted (to facilitate extraction). The placenta followed with a quantity of coagula, and the vagina and the cavity of the peritoneum were sponged out as cleanly as possible, with new sponges wrung out of warm water.

After delivery, a hypodermic injection of atropine $\frac{1}{60}$ gr. was administered, and brandy repeated with ℥i. Tinct. Opii. The breathing seemed somewhat improved after delivery, and the pulse returned very feebly at the wrist. Ordered brandy ℥ss., opium gr. i. every half hour, broth, hot bottles, turpentine frictions to extremities, many-tailed flannel bandage. At 2 P. M., the surface regained its temperature, and the woman slept at intervals during the day and night. She took 13 grs. of opium, and 15 oz. of brandy during the first 24 hours after delivery. At 10 A. M. 25th, pulse 144, respiration 36, temperature 100, drowsy, but pupils not contracted, slight tenderness, lochia rather pale. Cont. rem.

Vesp.—Pulse was 120, respiration 36, temperature 100, skin warm, moist and soft, abdomen rather tympanitic. Doing well.

December 26th.—Abdomen more tympanitic, rather hard and containing a very small quantity of fluid, which is only just perceptible on firm palpation. Respiration 36, but since 8 A. M. has become somewhat labored from excitement caused by her relatives prevailing upon her to be removed to their own house. Temperature 96; pulse 140, full, but compressible. Has taken 16 grains of opium, and 12 oz. of

brandy since yesterday. Pupils contracted. Has slept for an hour or two at a time during the night, and is now but little drowsy, and talking quite sensibly. Continue brandy and opium. Removed by her people at 11½ A. M.

December 27th.—Reported to be still alive and much the same. 1870, February 4th, the woman is reported to have made a complete recovery.

Coollammah, Æt. 21, second pregnancy, was admitted into hospital at 10 A. M. on the 15th November, moribund, with symptoms of internal concealed hæmorrhage. Cold surface, imperceptible pulse, gasping for breath, and extremely restless, was unable to reply to questions, though was not insensible. It was stated by her friends that the day before she was restless and refused food, and towards evening complained of pain in the lower part of the back and a dragging pain in the nape; was not supposed to be in labour, and no midwife had been called in. Towards morning she became restless and cold, with hurried breathing, and arrack was given to her; the pain continued just as at first. There had been no appearance of bleeding.

On examination, the os admitted the finger but no presentation was within reach, and on withdrawing it, it was covered with vaginal or cervical mucus, but not a tinge of blood. The uterus was found at the lower part of the abdomen, longer than usual in transverse diameter, and irregular in outline. High in the abdomen, the body and limbs of a child could be distinctly felt immediately under the abdominal parietes. Fœtal heart inaudible.

It seemed doubtful whether the uterus itself had ruptured, or whether the child had escaped from the cyst of an extra-uterine gestation.

Brandy was given immediately, with a large opiate, but the woman was at the point of death, and expired a few minutes after. The abdomen was immediately opened and the child extracted; the amnion in which it was inclosed was unruptured, and contained the amniotic fluid. The child, a female, was still, and the cord quite flaccid and pulseless. The cavity of the peritoneum was filled with coagula and fluid blood, and the uterus was found ruptured through the fundus, from before backwards, as low as the middle third of the organ. The placenta was *in situ*, having been only partially detached by the contraction of the uterus; the membranes over the os were still entire. Along the margin of the

rupture, the parietes of the uterus were extremely attenuated, and consisted of little more than the peritoneal investment and the external layer of fibres. There was no rigidity of the os to account for the rupture, which seemed solely due to the condition of the uterine parietes above noted close to the margin of the placental attachment.

Thoyee, Æt. 23, fourth pregnancy, was admitted into hospital at noon 18th December, said to have been in labour 26 hours, and membranes to have ruptured 25 hours before admission; pains ceased 16 hours before, skin hot, pulse very rapid, small and thready, respiration hurried, anxious countenance, eyes sunken, abdomen tender and tympanitic. Vomited while coming to hospital, bowels very loose, said to have been the effect of a purgative enema given by an East Indian midwife in town. The limbs of a child were easily felt under the abdominal parietes, and uterus contracted and empty on the right side. Os open, admitting the hand, which on being passed up, enters a rent through the cervix on the anterior and left side into the cavity of the peritoneum, where the child had wholly escaped along with the placenta. Symptoms of collapse soon set in, surface became cold, respiration more hurried and laboured, pulse disappeared at the wrist, face and forehead bedewed with cold perspiration. Tinct. opii ℥ ss., brandy ℥ ss. on admission, and the latter continued in doses of ℥ ss. every half hour, hot bottles to sides, blankets, &c.; a subcutaneous injection of atropine was also given at 1-30 P. M. (♏ vii. 1 gr. sol.) At 1-45 Gastrotomy was performed in the usual way, an incision five inches in length was made below the umbilicus, nearly in the median line, the placenta was found lying immediately below the incision, and the child, a large male, was delivered through the opening by the feet. All blood, &c. were carefully wiped out of the cavity by clean sponges; the intestines and other viscera were found already greatly inflamed; the wound was closed by four deep and five superficial wire sutures, without transfixing the peritoneum. A many-tailed flannel bandage and dressing were then applied. Opii gr. 1 every hour, and brandy ℥ ss. semihorâ. Woman did not rally after the operation, and a hypodermic injection of liquor ammoniæ ♏ v. c̄ aq. ♏ x. was inserted into the arm with the effect of temporarily raising the temperature; hot bottles, &c., continued.

She expired at 3½ P. M., 1¾ hours after delivery.

η. Other Complications.

Three cases of Collapse, and two of urgent Dyspnœa with heart disease, are included under this head.

One recovered. She was admitted in her seventh pregnancy, in a very emaciated and exhausted state from previous want, with vomiting, and a rapid, almost imperceptible pulse. Labour set in soon after, and she was quickly delivered of a premature child of seven months, after which symptoms of complete collapse supervened, with extreme restlessness, and inability to retain any thing in the stomach. Stimulants and nourishment, with opiates, were freely given in enemata, and after 48 hours she had rallied and ultimately made a good recovery.

Another, a Brahminee in her fifth pregnancy, was admitted with urgent dyspnœa and collapse 30 hours after commencement of labour; pulse hardly perceptible, and surface cold. Uterine action had ceased. Delivery was effected by Zeigler's forceps, and brandy and nourishment were freely administered. She was removed by her relatives the same day, and was reported the next day as alive and better, but as nothing further was heard of her and there seemed no probability of her ultimate recovery, the case has been returned as a fatal one.

A third, admitted in the 7th month of her 1st pregnancy with urgent dyspnœa and anasarca died undelivered. There were extensive valvular disease and albuminuria.

The fourth, also a primipara, was suffering from extreme collapse on admission at the full term, with cold surface and imperceptible pulse. An attempt was made to accelerate labour by introducing elastic bags, but it was unsuccessful, and she likewise died undelivered.

DISEASES OF PREGNANCY.

Twenty-eight cases of *abortion* and twelve of *retained placenta after abortion.* Total 40, 1 in 34. Of these six died, 1 in $6\frac{2}{3}$, which is a very high proportion. The first, in her 6th month, had considerable loss of blood before admission, there was also some further loss during the artificial dilatation of the os, followed by secondary hæmorrhage on the 3rd and 4th days after delivery.

The second was admitted in the 5th month of pregnancy with extensive pneumonia. She aborted on the following day, and was removed in a precarious state the day after.

The third, an European, was admitted in the 5th month of gestation with a severe attack of peritonitis from exposure and cold. She had been brought in from Tripasore. Two days after admission she aborted, after being in pain two hours, and died the same night.

The fourth, admitted a week after an abortion of three months with retained placenta in a putrid condition, was suffering from metroperitonitis and septicæmia. The attempt to extract the placenta failed from the closure of the os, and the pain and tenderness forbidding the necessary dilatation. She died on the seventh day.

Fifth; a woman in her ninth pregnancy, was quite blanched from loss of blood on admission, and was said to have aborted three hours before, she was very restless and collapsed. The placenta, still in utero, was extracted without delay, and no further flooding occurred. She was taken away by her relatives on the following day, and subsequently was reported to have died on the 3rd day.

The sixth, a woman in the 7th month of her first pregnancy, was admitted quite blanched, pulseless and cold, five hours after delivery. She seemed to have bled a great deal and placenta was retained. It was immediately removed without any further loss and stimulants and opium given freely, but she died in a few hours.

MATERNAL DEATHS.

The deaths of mothers in hospital numbered 39. Of these eight were due to non-puerperal causes. In addition to these, twelve were removed in a very precarious or dying state. Assuming that all these also died, the total mortality would be 51, 1 in 26·8 or 3·73 per cent. This mortality, which is considerably greater than that of the preceding year, is chiefly due to the occurrence of puerperal fever in an epidemic form on two occasions.

THE CAUSES OF DEATH of the 39 women who died in hospital are as follows :—

Puerperal Causes—31.

Puerperal Fever.	Natural labour	7
	Laborious labour	5
	Preternatural labour	1
	Plural births	1
	Puerperal convulsions	3
	Abortions	2

Shock, &c. from.	Hæmorrhage	3
	Ruptured uterus and vagina	7
Coma (1 undelivered)	Puerperal convulsions	2
		—31

Non-Puerperal Causes—8.

Diarrhœa	Natural labour	1
Albuminuria and anasarca (1 undelivered)	Collapse	3
Pneumonia	Natural labour	1
Cholera	Natural labour	2
Valvular disease	(Undelivered)	1
		— 8
		—39

The following are the diseases of the 12 women who were removed in a precarious or dying state.

Puerperal Causes—7.

Puerperal Fever.	Laborious labour	2
	Preternatural labour	1
	Placenta prævia	1
	Puerperal convulsions	1
Shock and Exhaustion.	Hæmorrhage	2
		— 7

Non-Puerperal Causes—5.

Dysentery	Post-partum Hæmorrhage	1
Pneumonia	Abortion	1
	Natural labour	1
Heart disease	Laborious labour	1
Coma	Apoplexy	1
		— 5
		—12

Of the deaths above shown, twelve followed natural labour, nine difficult, two preternatural, twenty-two complex; and six were from diseases of pregnancy.

The ages, number of the pregnancy, and the duration of labour of these deaths are shown in the following tables.

Ages of women	17	18	19	20	21	22	23	24	25	26	27	28	29	30	over 30	Total.
Women died or removed	3	1	1	7	2	3	3	5	5	1	3	2	2	2	11	51

Number of pregnancy ...	1	2	3	4	5	7	9	11	Total.
Women died or removed ...	15	9	8	5	7	2	2	3	51

Hours in labour	3	4	5	6	12	18	24	36	78	Unknown.	Total.
Women died or removed.... ..	4	1	4	4	8	7	4	9	1	9	51

The influences of age and number of the pregnancy are not so remarkable as predisposing to death as the duration of labour, for it can be shown that more than 50 per cent. of the deliveries after 24 hours terminated in death.

PUERPERAL FEVER.—Two epidemics of puerperal fever have been reported during the year, the first in August, the second in the latter end of November. The casualties from this cause have amounted to 24.

4 died from Gastro-enteric Fever or Diarrhœa.
5 after Puerperal Convulsions or Anasarca.
1 from Puerperal Mania.
2 „ Phlebitis.
1 „ Cholæmia.
1 „ Pyæmia.
10 „ Simple excretory and traumatic (inflammatory) forms.

At the time of the first outbreak of puerperal fever in an epidemic form, towards the end of July, erysipelas was prevailing, and the type of disease generally was low. Cholera was also prevalent, by which one woman had been attacked in the beginning of the month, four days after confinement, and died. The hospital had been over full for some weeks previously, especially the European ward, in which the *average* number of patients since the 1st

April had somewhat exceeded that for whom space was limited. Between 25th July and 6th of August five cases of puerperal fever were reported, four of which proved fatal. No time was lost in adopting such measures as seemed advisable: as many dispensary patients as possible were sent out of hospital, no further admission of pregnant women unless brought in labour was allowed, the infected wards were emptied and fumigated, and tents were pitched for the reception of cases as soon as the disease became manifest. These measures had the desired effect; the hospital became comparatively healthy from the first week in September, and remained so until the end of November. The Native lying-in ward was crowded the whole of September and October, notwithstanding the number of pregnant women on the books had been reduced to nearly one half. In the beginning of December a second outbreak occurred. Two of the patients in hospital were almost simultaneously attacked with cholera, one in the European ward under treatment for uterine disease, and the other in the Native lying-in ward eleven days after confinement. They both died. Two deaths from puerperal fever were reported at the same time, and "weid" was rather the rule than the exception, there being five cases in the same ward out of nine or ten confined women. The advisability of temporarily closing the hospital consequently became a question for serious consideration. As many patients as possible were again discharged. All the pregnant women were sent away, as well as the dispensary patients, except two or three who had come from up-country. The wards were emptied successively, the walls scraped and washed, the brick flooring taken up and asphalt laid down in its place, and a temporary ward for contagious diseases was built near to the hospital. Besides the above measures which were urged upon the Government as an emergent work by the Inspector General and carried out immediately, fumigation was extensively used, and the strictest segregation of fever and weid cases enforced from the earliest commencement of suspicious symptoms.

It is hoped these measures will have a beneficial effect, but there are other points of importance which equally demand attention. To prevent the tendency to overcrowding, a much larger building is required, unless admission be constantly denied to dispensary patients suffering from diseases peculiar to women, who claim, for many reasons,

an equal if not a greater share of our sympathy, and need, as a rule, much more of our immediate attention for their relief. To obviate the tendency to the development and spread of zymotic disease, caused by the site of the building being so low and close to the Cooum, the foul odours from which frequently pervade the wards and sometimes render them intolerable, one only remedy suggests itself, and the importance of constructing an entirely new hospital in a more elevated situation, in preference to making any further addition to the present building, cannot be too strongly urged upon the authorities.

The following case of a rare recovery after Erysipelas is worthy of record.

Mrs. Bent, Æt. 20, first pregnancy, was admitted into hospital at 2 P. M. on the 5th December, 1868, said to have been in labour two hours; membranes entire, head presenting in first position. Labour natural, terminated at 8 P. M. Child male, alive. On the fifth day complained of swelling and pain in the right leg, which is found much swelled between the knee and ankle, and also had some tenderness along the course of the femoral vein, especially near the crural ring. States that she has had this swelling off and on for two years, with repeated attacks of fever, and pain in course of the vein. The swelling appears of the character of Elephantiasis. On the 7th, vespere, had fever, and diaphoretic mixture was prescribed; on the 8th a dose of oil, and there being tenderness with offensive lochial discharge, Hydr: $\bar{c}$ Cretâ $\bar{c}$ Pulv. Doveri every third hour. Stupes and carbolic syringing.

On the 10th the grey powder was omitted and quinine substituted, and on the 12th, the tenderness being somewhat increased and lochia scanty, Hydr. $\bar{c}$ Cretâ was again added to the powders. Had diarrhœa on the 13th, for which Mist. Cretæ Co. $\bar{c}$ Tinct. Catechu was ordered, and yesterday, 14th, had some pain in one buttock with slight redness of the surface.

15*th.*—To-day the redness is increased, and is erysipelatous, vulva also swelled and red. Pulse good.

The red patch to be surrounded by a cordon of solid caustic and a 30 grain solution of the same to be injected into uterus.

℞ Tinct. Ferri. ʒ ss., Morph. gr. ¼ every 4th hour in water. Portwine, ℥iii. Brandy, ℥iii. chicken diet.

16*th.*—Redness spreading beyond the line formed by the solid nitrate. Diarrhœa continuing.

Cont. Mist. $\bar{c}$ Morphiæ gr. ss.; Wine 2 measures; Brandy 1 measure.

17*th.*—Erysipelas still spreading over both nates, diarrhœa the same, scarcely any sleep, takes nourishment freely.

Cont. Mist.; Pulv. Cretâ Aromat. $\bar{c}$ Opio. gr. xv. every 3rd hour; extra broth; two eggs; ℥iii. Port; ℥iii. Brandy. Apply Sol. Arg. Nit. gr. 30 over all the red surface.

18*th.*—Redness still spreading almost as high as the loins. Pulse 128, pretty good. Slept most of the night. Diarrhœa better, four times. Tinct. Ferri ♏xl.; Morphia gr. ss.; Ether ℥ ss.; Mist. Camph. ℥ ss. every four hours. Cont. Brandy, Wine, and nourishment. Rep. Sol. Arg. Nit. to the surface.

21*st.*—Since last report has slowly improved; the erysipelas ceased to spread, and the redness has gradually disappeared from the buttocks. Vulva still somewhat swelled and tender, but less so than before. Lips very white. Pulse 132, of moderate force, sleeps well and takes nourishment. Diarrhœa continues, bowels were controlled yesterday by an enema of acetate of lead, but have been moved four times since day-break.

Cont. Mist. Ferri; Omit Pulv. Cret. Co.

℞ Cupri Sulph. gr. ¼; Opii gr. i; Quiniæ gr. ii; *ter in die.*
Zinci Sulph. gr. x.; Conjee ℥ i., Opii gr. ii; in enema.
Brandy and Wine, of each two measures.

22*nd.*—Bowels once moved only. Pulse 136, of pretty good power. Slept well. Redness and swelling on buttocks less; the former extending slightly down the thighs.

Continue.

26*th.*—Bowels moved three or four times nearly every night and early morning, and quiet during the day. Pulse 132. Swelling and redness extended to right leg. Is rather deaf and talks incoherently at times. Taking sufficient nourishment.

Continue.

28*th.*—Improving, though both feet and legs are now swelled and red. Pulse 124. Diarrhœa checked.

January 9th, 1869.—Improving daily, redness of the legs entirely disappeared, and fast picking up strength.

A small abscess behind the anus burst during the night, deafness gone.

Catap. Com. Brandy and Wine, of each one measure Mist. Ferri Cit. et Quiniæ.

18*th*.—Brandy was omitted on the 12th. Continued to improve, though some swelling of the right leg still remained, and she was directed to wear a bandage for some time. Discharged, and made a good recovery.

FATAL CASES.

Of the 51 deaths, 24 have been noticed under "Puerperal Fever," with the form assumed by the disease and the description of labour which it followed. Seven of the deaths of Natural Labour were due to this cause, and of the other five, one, Paulliam, Æt. 25, first pregnancy, was attacked with pneumonia on the third day; both lungs became involved, and she died with symptoms of thrombosis of the pulmonary artery on the sixth day.

The second, Toolkanah, Æt. 20, first pregnancy, had an easy labour, and on the third day, the usual dose of oil was given. The morning after, she vomited two worms and was attacked by cholera; after being purged twice collapse quickly supervened; she had only five liquid stools, and died in ten hours.

The third, Poonamah, was under treatment in hospital with albuminuria and anasarca for five weeks before labour set in, and she was then confined in three hours of a putrid fœtus. The swelling quite disappeared during the first week, when the lochia ceased, and on the twelfth day she complained of tenderness of the abdomen, and the uterus became relaxed and enlarged. Two days later she suddenly became restless, and died in less than three hours with symptoms of thrombosis.

The fourth, Mrs. T., Æt. 30, third pregnancy, a fair East Indian, was admitted some days before labour set in, but she made no complaint until during her confinement it was discovered that she had œdema of the lower extremities and albuminous urine. She had been leading an irregular life for some years, and had had no child for ten years. Besides the fact of living apart from her husband, her mind was distracted with domestic trouble of another kind. General anasarca supervened on her confinement, but was

relieved by treatment; on the seventh day secondary hæmorrhage occurred. The bleeding recurred on the tenth and thirteenth days, subsequently a quantity of pus was voided in the urine for some days, and she suffered from severe pain in the region of the right kidney. She ultimately died on the twenty-seventh day after delivery. An autopsy could not be obtained.

The fifth, Narrainee, Æt. 35, fifth pregnancy, had rigidity of the cervix during labour, which was overcome by a hypodermic injection of morphia and atropine, gr. $\frac{1}{6}$ of the former and $\frac{1}{120}$ of the latter. Recovery was delayed by thrombotic puerperal fever in a mild form, and on the night of the twelfth day after delivery she was attacked by cholera, passed through the stage of collapse, and rallied, but died from coma on the sixth day after.

Another patient, in the Dispensary attached, was attacked by cholera on the same day, and died after a similar lapse of time from the attack.

The disease was not prevailing epidemically at the time; but it was coincident with an outbreak of puerperal fever in the hospital.

Seven of the deaths of Laborious Labour were also due to Puerperal Fever. The remaining one, Murryamah, Æt. 24, fourth pregnancy, a widow, deserted by her friends, was admitted 17 hours after labour had begun. There was occlusion of the os. Dilatation was effected by bougies and sponge tents, and she was delivered of a premature male child alive, nine hours after. She was suffering from pneumonia at the time; the symptoms were aggravated after delivery, and she died in 60 hours. It was said she had taken medicine to procure abortion.

Of the 21 remaining, one has been noticed under Placenta Prævia, and one under Post-partum Hæmorrhage.

The death from morbid adhesion of the placenta was a woman (Ellammah) aged 39, in her eleventh pregnancy, who had been delivered of twins 25 hours before admission. She was blanched from loss of blood and pulseless. Brandy was freely administered and the placenta extracted, the bleeding which continued to drain was arrested by the injection of Tinct. Ferri Perchlor. 1 part to 8 parts of water into the cavity of the uterus. No further hæmorrhage

occurred, but the woman was so exhausted that she did not rally, and died two hours after.

One case of puerperal convulsions (apoplectic) has been noted under that head, as also one of epileptiform that died undelivered. A third was admitted in a state of complete insensibility. The paroxysms came on about every half hour, and delivery was not effected for five hours. The fits continued after delivery, and the woman died in nine hours from the birth of the child.

Seven deaths from ruptured uterus and vagina, and three others under collapse and heart disease have been noticed under these heads respectively.

Another case of sudden death after delivery, Mrs. Peters, an East Indian, Æt. 27, third pregnancy, had been under treatment for some days with cough and dyspnœa before labour set in, and was confined of a premature ill-nourished child after a labour of six hours. She was in an extremely emaciated and enfeebled condition from previous want. Tubercular deposit was suspected, but the evidences of it were not distinct on account of the dyspnœal respiration. She was attacked with diarrhœa on the day after delivery, but it was arrested on the second day, and the third day she seemed to be going on favorably until the evening, when she became restless and collapsed, and died in four hours. An autopsy could not be obtained.

Of the four remaining, one named Ponnee, Æt. 26, second pregnancy was admitted, being five months pregnant, suffering from extensive pneumonia of the right lung; she aborted on the following day and on the next was removed by her relatives in a precarious state.

The second, Murrayamah, Æt. 39, eleventh pregnancy, was admitted in the sixth month of pregnancy in a very weak state from previous loss of blood, twelve hours after commencement of labour. Os still undilated. Barnes' elastic bags and ergot were employed, and some more bleeding occurred before the ovum could be removed, which was done by craniotomy two hours after admission. Brandy and opium were freely given, and she rallied from the collapse and recovered from the restlessness; but on the second day she had a sharp attack of secondary hæmorrhage, which was not discovered until the bed was soaked, owing to the inattention of the nurse, and was followed by another flooding

on the evening of the following day, which was speedily controlled. The loss of so much blood was more than the system could bear, and she sunk from exhaustion and was removed in a dying state on the fourth day.

The third, Allamalu, Æt. 36, ninth pregnancy, was admitted with retained placenta, three hours after aborting at the fifth month. She was blanched from loss of a large quantity of blood. Placenta was immediately removed, and there was no further hæmorrhage. She was supported with Brandy nourishment and opium, but exhaustion continued and she was removed in a very precarious state the following day.

The last, Yellammah, Æt. 21, first pregnancy, was admitted, in a state of complete collapse, five hours after delivery of a still-born fœtus in the seventh month, with retained placenta. The latter being in the vagina, was removed and the uterus was found firmly contracted. Her people stated that she had not lost blood in any quantity, and the cause of the collapse was not apparent. Stimulants failed to produce reaction, and she died thirteen hours after admission.

CHILDREN.

The produce of 1,323 deliveries, excluding abortions, was 1,340 children, 17 being twin births. 1,141 were born at or near the full term, 85·5 per cent., and 199 were premature, 14·86 per cent. The data obtainable from natives with regard to the duration of their pregnancies are so imperfect and unreliable, that the mode adopted of determining the maturity of the child is solely by its weight, and therefore it must be regarded as quite an arbitrary one. All children from 5 lbs. and upwards are entered in the register as born at full term, those from 5 lbs. down to 3 lbs. as premature, and those below 3 lbs. as abortions.

Sex.—Of the 1340 births, 718 were males and 622 females. The proportion of males to females is 53·58 per cent., or 113·8 males to 100 females. The reason why the proportion of males in this country preponderates so much, has not been explained.

Live and Still Births.—1211 of these children were born alive, including 146 premature births, and 129 were still-born, including 24 premature and 36 putrid. Of the

viable children, the ratio of live to still births was 90·37 per cent., but excluding putrid children from the still-births, the ratio of the latter to live births is 6·9 per cent.

SEX OF STILL BIRTHS AND PUTRID CHILDREN.—Of the 90 still-born, 48 were males and 42 females or 53·3 per cent. of the former to 46·6 of the latter; while of the putrid, the majority were females, the numbers being 17 and 22 respectively.

The *Still-Births* occurred under the following circumstances :—

		Mode of delivery.	
Natural labour		Natural powers	23
Tedious labour		Do.	2
Laborious labour		Forceps	7
		Version and Craniotomy	1
		Craniotomy	5
Preternatural labour	Inverted	Extraction	6
		Craniotomy	2
	Transverse	Embryotomy	3
		Version	4
		„ Forceps	2
		„ Craniotomy	1
		Spontaneous Expulsion	1
Complex labour	Plural Births	Natural powers	6
		Version	1
	Placenta Prævia	Version	1
		Craniotomy	2
	Accidental Hæmorrhage	Natural powers	2
		Extraction by foot	1
	P. Convulsions	Natural powers	2
		Forceps	6
		Craniotomy	1
	Ruptured Uterus and Vagina	Forceps	3
		Craniotomy	2
		Version and Craniotomy	1
		Gastrotomy	2
Descent of funis		Version	1
		Extraction by foot	1
	Collapse	Forceps	1
			—90
	Putrid Fœtus		39
		Total	129

Deaths of Children in Hospital.

During the year 57 children died in hospital within the first ten days of life, from the following causes :—

Asphyxia from over-lying..... ...	6
Atelectasis.....	4
Cephalæmatoma...	1
Contusion of the head (Forceps).	1
Convulsions.....	7
Do. (Forceps).....	1
Diarrhœa.....	1
Hepatitis (1 abscess).....	2
Neglect.....	2
Trismus Neonatorum.....	2
Premature birth.....	20
Do. (Twins).....	2
Do. (Fissure of hard palate and hare-lip).....	1
Do. (Jaundice).....	1
Do. (Convulsions)	6
	57

OBSTETRIC OPERATIONS.

107 women were assisted in their labours, one in nearly every twelve deliveries.

The Forceps was employed in 61 cases, 1 in 21·7 (excluding abortions). In 41 the labour was *Difficult*, in 5 *Preternatural*, and in 14 *Complex*.

In 57 cases delivery was accomplished by this instrument alone, and in four it was accessory to version or embryotomy. The child was born alive in 40 and still in 17 : 1 in $3\frac{1}{3}$. This high death-rate of the children is accounted for by the complications with which many of the labours were attended, viz., Puerperal Convulsions in six, Ruptured Uterus and Vagina in three, and Collapse in one, in all of which the children were already dead.

Version was performed in 18 cases : in four of which the *head* presented and there was a minor degree of pelvic contraction ; in eight the *upper extremity* was presenting ; and in six the labour was rendered "Complex," by placenta prævia in one, Ruptured Uterus and Vagina in one, and Descent of the Funis in four. The after-coming head was extracted by forceps in one, and by craniotomy in three. In six the child was born alive and in twelve it was still.

In the four cases of head presentation in which version was resorted to, the forceps had been used tentatively and failed. In three of them the child was delivered alive, and in the fourth the head was extracted by craniotomy. An abstract of these cases is given as the advantage of Version, in certain cases of minor deformity of the pelvis, when, after trial, delivery by forceps seems incompatible with live-birth, is well shown.

Contracted Pelvis; fourth position; descent of the funis —Forceps failed, delivered by Version. Child male, alive.

Murryamah, Æt. 30, fifth pregnancy, was admitted five hours after commencement of labour. Os size of a rupee, membranes ruptured, head and funis presenting in 4th position, high up in the brim. The cord was returned and kept above the head by the knee-elbow position, and there being no uterine action, a light binder was put on half an hour afterwards. Child was alive. After waiting $2\frac{1}{2}$ hours without any progress being made and the os being sufficiently dilateable, an attempt was made to deliver by long forceps under chloroform. Considerable contraction of the antero-posterior diameter of the brim was found to exist, and the forceps failed to improve the position of the head in the slightest degree. The available space, as far as I could judge, was not more than $3\frac{1}{4}$ inches, and during an examination which was again made after removing the forceps, the cord again descended. The peril of the child being now very great, Version was performed without loss of time; there was slight delay in liberating the arms, which were placed on either side of the head, and during the expulsion of the shoulders, partial laceration of the perineum occurred (1st degree); cord was pulseless, and the head was extracted by traction on the shoulders and feet.

Resuscitation of the child (a male) was happily effected by the ordinary means, and the woman made a good recovery, with the exception of a small slough from the vagina. She was discharged on the 17th day.

Large ossified head.—Forceps failed, delivered by Version. Child male, alive.

Ammakunnu, Æt. 38, eleventh pregnancy, was admitted 17 hours after commencement of labour, and seven hours after rupture of the membranes. Os size of a rupee, head in

1st position in brim, child alive, no pains. Three hours after admission, os being fully dilated and no advance of the head having taken place, delivery was attempted by long forceps under chloroform, but the efforts made to bring down the head proving unsuccessful, and the resistance being felt to be very great, it was considered that a better chance would be afforded to the child by Version. Turning was effected without much difficulty, but strong traction was required to deliver the head. Child (a male) was asphyxiated, but resuscitation by ordinary measures proved successful, and the woman made a good recovery. Discharged on seventh day.

Contracted Pelvis; third position.—Forceps failed, delivery after Version, by Forceps to after-coming head. Child female, alive.

Allamalu, Æt. 20, first pregnancy, admitted at 2 A. M. shortly after setting in of labour. Os size of a quarter rupee. Head in 3rd position, membranes entire, pains good. The membranes ruptured prematurely two hours after admission, and dilation of cervix was then promoted by tepid irrigation. Os fully dilated at 9 A. M. An hour later, no advance taking place and head being high up, a careful examination was made, when the head was found large and ossified, and wedged in the brim which was somewhat contracted. Long forceps was applied, and the head subjected to considerable compression without avail. Not the slightest advance could be measured after repeated efforts, and the instrument was abandoned. Child being still alive, Version was determined on and carried out without much difficulty under full effect of chloroform. After bringing down a foot, the case was left until the breech had been expelled by natural powers aided by external pressure; a loop of cord which was then brought down, being found to pulsate feebly and slow, extraction was no longer delayed. The body and arms were liberated easily, but traction on shoulders and feet failed to extract the head, though much force was employed, and it was therefore delivered by long forceps, which had been kept ready at hand. Child a female, was asphyxiated, but restored by the usual means. The perineum was unfortuately lacerated in the 3rd degree in the haste of delivering the head.

Mother made a good recovery, perineum having been united by sutures, and was discharged on the 15th day.

Large Ossified Head—Forceps failing, delivery by Version and Craniotomy.

Rungammah, Æt. 25, seventh pregnancy, was admitted 24 hours after commencement of labour, and 13 hours after rupture of membranes; os the size of a rupee, and head in first position. Pains were feeble, and os somewhat rigid and indisposed to dilate. Rectum was emptied by an enema, and a tight binder applied; and two hours later a hypodermic injection of morphia $\frac{1}{6}$ and atropine $\frac{1}{240}$; elastic bags were then employed, and in another two hours full dilation was complete. There being no advance of the head, which was found much ossified and pelvis slightly contracted, delivery by long forceps was attempted under chloroform, but the blades slipped off twice without advancing the head, and was followed by slight bleeding. Version was then performed, and in extracting, the arms were liberated from the sides of the head with much difficulty and after some delay. Then the exit of the head was obstructed, and some further delay occurred in attempting to extract it by traction, during which the cord ceased to pulsate, and the child was lost. Delivery was ultimately effected by the crotchet, after perforation of the occiput and reduction of the head. Child a female, weighed $7\frac{1}{4}$lb.

The woman was attacked by puerperal fever, and was removed by her relatives four days after in a precarious state, but it was not considered that death was inevitable.

CRANIOTOMY.—This operation has been resorted to in 18 instances, 1 in 77·8 or 1·28 per cent., in all of which, with only one exception, the child was undoubtedly dead before the perforator was used. In eight of these cases the head was presenting; in three the after-coming head was reduced; two were cases of placenta previa; three of ruptured uterus or vagina; one of puerperal convulsions; and one was an abortion in seventh month with severe hæmorrhage.

EVISCERATION.—The child has been delivered by this means in three instances, 1 in 440.

EXTRACTION OF THE HEAD in three instances of inverted labour was necessary.

EXTRACTION BY FEET: in three instances of compound presentation or inverted positions.

INDUCTION OF PREMATURE LABOUR in four cases, one after apoplexy; one in fatty mole with long continued

hæmorrhage; one in putrid fœtus; and one in a case of severe acute bronchitis.

GASTROTOMY was performed in two cases of rupture of the uterus: in one the child was extracted immediately after the death of the woman a few minutes after admission, and in the other the woman was extremely exhausted and hardly likely to outlive the operation. She did not rally, and died in $1\frac{3}{4}$ hours.

INTERNAL ECONOMY.

The daily cost of dieting each European and East Indian pregnant and confined woman has averaged Rupees 0-9-0, and the average cost of each confinement was Rs. 10-1-9.

The total disbursement in money allowance, in lieu of diet, to Native pregnant and confined women amounted to Rupees 3667-12-0, which gives an average of Rupees 2-15-5 for each confinement.

The recoveries from European and East Indian patients on account of hospital stoppages amounted to Rs. 173-11-0.

The expenses of the Pupil Nurse Class for the year amounted to Rupees 542-3-3.

Eight Pupils obtained diplomas as midwives; four resigned, and one was dismissed.

The whole of the labour of compiling the tables in this Report has fallen upon Mr. Boon, the Apothecary of the Institution.

SALE OF POISONS.

WE shall now conclude our remarks upon this subject by an examination of the Report of the Committee, the appointment of which by the Madras Government we mentioned in our last number. They considered any measure of the nature of the Bombay Bill undesirable—unlikely to "accomplish any result either in the way of preventing poisoning, or of furnishing facilities for its detection, which would compensate for the expense of carrying out the measure, for the additional labor which it would cast upon the executive [*i. e.*, as subsequently interpreted, the *police*], and for the annoyance and oppression to which it would give rise." Having thus stated their conclusions, they proceed to justify them by argument, beginning with the defence of their weakest point, that relating to the mineral poisons and arsenic more especially. Confessing the great frequency of poisoning by the latter drug, and that the suggested law *would certainly render it more difficult to procure it* and poisons of the same class, they maintain that unlicensed possession of the drug must also be made penal as well as the sale of it, in order to render the law effective. Native practitioners use arsenic "largely" as a medicine; therefore their possession of "considerable quantities" of it would be innocent, and from them it could easily be procured without infraction of the proposed law. "It would be generally impossible to prove a sale, and without a sale there would be no offence." If, however, mere possession were made criminal, the offence could rarely be discovered until after the commission of a crime. Hence the law would be powerless to prevent poisoning, and would only be occasionally useful in inflicting a minor punishment for possession of the poison upon a person acquitted of murder. In the case of the more dangerous vegetable poisons, (Cannabis,

Croton tiglium and Dhatura are named, but not Aconite) the proposed law would be powerless, because the drugs can be picked up in the nearest field. If the difficulty of procuring the mineral poisons were sensibly increased, criminals would have recourse to the vegetable poisons, the presence of which in the body is much more difficult of detection. Again, a law of the kind would give the Police a great deal of trouble, and require, moreover, that they should be educated in Mineralogy and Botany, if they were to "supervise the sale of poisonous drugs in every village in India"! Finally, a special organization, if considered essential, (as suggested by the Superintendent of the Thuggee Department), armed with the necessary powers of search and inquiry "would before very long be felt to be a nuisance of the first magnitude." The Report concludes with an admission that "it might be possible to check the use of arsenic and other mineral poisons which require careful preparation," but re-asserts that the result would be to direct the poisoner to vegetable poisons. "As long as motives for poisoning exist, the means will never be wanting."

Now one most obvious answer to all these arguments is that they apply as forcibly to the United Kingdom as to India; and yet it has been found desirable and practicable to restrict the sale of poisons by stringent legislation in England and Scotland, and the absence of a similar safe-guard in Ireland has quite recently been noticed in Parliament, and will undoubtedly be remedied without delay. Again, it is to be borne in mind that many of the Committee's remarks are applicable only to a Bill like that suggested in Bombay, which should include a needlessly long and complex List of Poisons. The Madras draft left it to the local Government to prepare and to alter from time to time according to circumstances the Schedule of Poisons which it should

be illegal to sell or possess without a license. Let the Schedule be short and simple, and most of the arguments stated above are beside the question altogether. If it contained *white arsenic* alone, it is evident from the statements of the Committee as well as from the experience of Judges and Magistrates, Police Officers, Coroners and Chemical Examiners, that many lives would be saved. We deny absolutely the statement that, failing arsenic, another drug would necessarily be used. The fatal facility with which arsenic can be used, from its absence of color, taste, and odor, and the consequent ease with which it can be mixed with food, not only confers upon it immense superiority over any vegetable poison of active properties, but favors and suggests its employment in very many cases where if it were not procurable, no other poison would be tried. There is one other common mineral—corrosive sublimate—which resembles arsenic in the qualities we have indicated. A Schedule containing these two drugs, and Potassium Cyanide (which is used to a large extent in considerable towns for photography and electro-typing) in its mineral division and aconite alone of vegetable poisons—a drug very often employed for homicidal purposes in our Northern Division, and one which cannot be "picked up in every field"—would be open to none or almost none of the Committee's objections, and would certainly tend powerfully to check a form of crime which is exceedingly prevalent and destructive in this country.

A law based upon the Madras draft Bill, with a Schedule of Poisons fixed from time to time by the local Government, and containing the four drugs we have named as a beginning, would involve no expense, no appreciable additional labor to the "executive," no annoyance or oppression to any one except a person with a weakness for throwing a handful of arsenic into a neighbor's rice-pot.

A drug of which the medical dose is about $\frac{1}{50}$ of the minimum fatal dose, cannot be said to be "largely" used by native medical practitioners, nor would the attaching of a penalty to the unlicensed sale or possession of it inflict any appreciable hardship upon physician or patient. Granting that the occurrence of a case of poisoning would often be the first intimation of the illegal possession of the poison, and that the law would be powerless to prevent that crime already committed, it cannot be questioned that future crimes of the same nature would be rendered more improbable by punishment for illegal possession when discovered. In conclusion, we may remark that if because "as long as motives for poisoning exist, the means will not be wanting," we should not attempt to render the means more difficult to procure, by parity of reasoning, it would be absurd to deprive a Moplah or a sailor of his knife, or to punish the manufacturer of burglars' implements; while it follows that all the recent and careful legislation of the Imperial Parliament with a view to the restriction of the sale of poisons has been a useless and injurious mistake.

SALT AS A PREVENTIVE OF CHOLERA.

IN these present times, when epidemic cholera is threatening around us in many places, it has occurred to us that a review of some of the evidence in favor of the use of common salt in warding off cholera may not be uninteresting, especially to the junior members of the profession, who have arrived in India since the time when the Public Press promoted a discussion on the subject.

The attention of the Government of India was drawn to the subject so long ago as 1863, when Captain Wood, the Political Agent of Nimar, reported

that in the city and district of Hoshungabad, and especially in the vicinity of the Jail, cholera raged with great violence in the year 1857, and that Dr. Beaman, of the Madras Medical Service, then Civil Surgeon of the station, had recommended a daily allowance of one rupee's weight of common salt, to be given to every one of the numerous prisoners, over and above the Government allowance. The result of attention to this advice is stated to have been that not "a single prisoner was attacked with cholera, though "several persons died from the epidemic near the "Jail, and many casualties took place in the regimental lines." According to Captain Wood, salt taken in this way is "certain in its action as a preventive."

Dr. Beaman is the son of a well-known London physician, who so long ago as 1833 gave his reasons for believing that salt was the best preventive of cholera. Beaman senior had founded his doctrine on actual experience of cholera and its prophylactic treatment in the years of epidemic prevalence in Europe, 1833-34. Beaman junior, of the Madras Army, has striven consistently for many years past to have his father's views tested in practice.

The report of Captain Wood was so far productive of movement in this direction, that the Jail rules of, we believe, every administration in India, now permit the Medical Officer at his discretion to order an increased issue of salt as a prophylactic of cholera, during the times of epidemic prevalence.

A recognition, in fact, has been made of the theory that salt may prevent cholera, and the responsibility of testing and recording the results of the practice recommended by the Messrs. Beaman and Captain Wood, rests entirely with Medical Officers in the charge prisoners.

The letter we have quoted from of Captain Wood's, and the subsequent discussion of it in the public papers, drew forth a singularly able and valuable

corroboration of the utility of the practice, from Mr. F. C. Brown of Anjarikaudy near Tellicherry. This document will be found recorded at length in the VIIth Volume *Madras Quarterly Journal of Medical Science*, page 439, but as the old Journals may not be available, we quote from it such extracts as bear most prominently on the question.

"It is now," he says, "more than forty years since peculiar local circumstances brought under my habitual notice a considerable body of natives of both sexes and of all ages, and that my attention was arrested by observing the singular immunity from cholera which they enjoyed during the successive times that the general population was being ravaged by its attacks."

* * * * *

"I came to reside permanently in Malabar in the year 1822. My father was then living and residing on this property, where he habitually employed about 400 day-labourers. In crop time they rose to between 5 and 600. Of the first number, about 300 persons belonged to the servile-agricultural castes. As these castes are not allowed to approach or dwell near the castes that are free, they and their families were located by themselves on the property in a village apart, and away from all other houses."

These labourers, both servile and free, were paid partly in kind, but the servile not being allowed to go into bazaars, were found also in salt, oil, sugar, and betel; in fact, were wholly fed and clothed by the proprietor of the estate. Mr. Brown goes on to remark:

"The salt was issued without stint. No person who has not closely observed native life, can be aware how frightfully and universally worms are prevalent amongst the people, nor how fatal the disorder is amongst young children. * *

Well aware of this great mortality and of its cause, and knowing that salt was the best of anthelmintics, Mr. Brown required not only that the parents should take sufficient salt for themselves and their children, but he insisted that the parents should mix the salt daily in their children's food. * * It was this humane purpose, the prevention and extirpation of worms, which had led for many years to the regular issue to the two castes of a large and liberal supply of salt.

I succeeded Mr. Brown at his decease in 1828. Ten years before, in 1818, cholera entered from the north, spread rapidly through

the country, filled it with death and desolation, and here, as everywhere else, prostrated the population by the unutterable terror which its sudden and irresistible attacks beget. From that time to the present its visits have continued, not exactly yearly or constant, but intermittent. * *

Throughout every part and in every class were the successive visits of the cholera more or less fatal, one only excepted, our villages of the servile castes. *Not one fatal case occurred amongst them;* the few attacked recovered in a few hours. * *

This singular immunity excited my surprise, and naturally fixed my attention. I gave it patient, careful and sedulous examination. The means and the opportunity of observing it were as complete and inviting as they were peculiar.

The objects were constantly before my eyes in their daily lives. From the year 1799, the year of their arrival and settlement on the property, an accurate record of their births and deaths had been kept, in order to mark their relative increase or decrease. * * In no one particular, except in the one of having a regular and sufficient supply of salt, could I find that the food or mode of living of the servile castes differed in any appreciable manner from those of the free labourers, with whom they daily came in contact, and worked in common.* *

My observation ceased only on my return to England in 1837. During all these years, not one fatal case of cholera occurred among my villagers at the time that the cholera was making its usual ravages upon the population around."

This testimony to the value of salt as a prophylactic of cholera is, we think, particularly valuable. The observations were continued for a period of fifteen years, during which the servile castes had no fatal cholera, while the free workers, *who mixed with them in their daily occupations*, had no such immunity.

The question has again we see incidentally cropped up in the proceedings of the Sanitary Commissioner for Madras for the month of March 1870. It would seem that the soul of one Mr. George Campbell, a late ruler of the Central Provinces, had been greatly troubled by the discrepancies in the quantities of salt issued to, and consumed by Indian prisoners, and that this gentleman had relieved his mind of his anxieties by writing a "Memorandum" on the

subject for the information of His Grace of Argyll, which memorandum, in due course, was sent out to India for enquiry and report. It appears from this document that the allowance of salt varies from 100 grains per diem in the North-West Provinces to 427·5 grains in Madras. The greater number of jails however have a medium allowance of half an ounce per man per diem, or 213 grains.

The Sanitary Commissioner of the Government of India, on being appealed to, thought that the prisoners in the North-West Jails, who received only one-fourth of an ounce of salt, were quite as healthy as those in Madras, and concluded that one ounce of salt was too much for the latter.

In due course these papers were referred by the Inspector of Jails to the Sanitary Commissioner for Madras for an expression of opinion.

We have not space to discuss the reply elicited by this reference, but will merely observe that Mr. Cornish, for reasons shown, deprecated any reduction in the Madras allowance of salt, which had been in use only three years, but in these years there had been such a marked reduction in cholera mortality in the jails as to call for special notice. It is due to the Sanitary Commissioner to point out that he fully admits that other influences had prevailed in some of the years—notably the absence of epidemic influences throughout the country in 1868.

The broad facts however remain, that previous to the introduction of the new scale of jail diet, and increased allowance of salt, the cholera admissions and deaths in Madras Jails one year with another had averaged 45·9 and 23·9 per mille respectively, while in the three years 1867-69, the ratio of admissions had fallen to 3·7 and of deaths to 1·7 per mille.

We do not wish to force an interpretation of these figures, and it is well perhaps to bear in mind the Sanitary Commissioner's caution, "that other and

important factors have been at work in diminishing the prevalence of cholera in jails of late years," but the results of the habitual use of a quantity of salt somewhat in excess of the physiological necessities of the body, we think, quite justifies the Madras Government in declining to cut down their issues of that condiment to helpless fellow-creatures, according to Punjaub and Bengal patterns.

What the actual quantity of salt necessary to keep a man in health may be, is not decided by the papers before us. The question, though physiologically interesting, is practically of no great importance, so long as we do not err in supplying less than the body requires. Where the tendency to the development of parasitic worms in human intestines is so common as it is in Southern India, it appears reasonable to suppose that an excess of salt, so that some may be passed unchanged in the feces of the "host," would tend to keep down the growth of the intruders. Practically this is, no doubt, the way in which salt acts as an anthelmintic.

Recent authorities who have written on cholera in India (Macnamara and Murray) both lay great stress on the action of the gastric juice, or any acid, in neutralising cholera matter in the stomach. Here perhaps we have something like a rational explanation why an excess of salt used daily as a condiment, may be of use in warding off cholera. Salt not only aids in the digestion of vegetable food by its stimulating action on the mucous surface of the stomach, but, in the mysterious chemical changes going on within our bodies it probably, in part at least, gives up its chlorine to form the free Hydrochloric acid of the gastric juice, and by keeping that juice in a healthy state, preserves the individual from the morbid changes which cholera matter, unconsciously swallowed, is known to produce when digestion is enfeebled, or defective.

The facts now before the profession in regard to the use of extra quantities of salt during cholera seasons, are we think of sufficient importance to demand that the practice shall be experimentally tried in all bodies of men, where the results can be observed and noted. It will not suffice to await the actual arrival of cholera at a station before issuing extra salt. The cholera season of each station is now pretty accurately defined, and to give the experiment a fair chance, the extra salt ration should be begun before the advent of cholera to a station.

If these remarks should lead any Medical Officer to try the experiment for themselves, we have only to add that both failures and successes should be recorded. More positive evidence is wanting to establish the absolute power of salt in warding off cholera.

REVIEWS.

On the Histology of the Cerebellum. A Thesis, for which the Gold Medal of the University of Edinburgh was awarded in the year 1869. By J. M. STRACHAN, M. D.

THE object of the numerous original researches of which this Thesis is chiefly the record, is to see what light, if any, the Intimate Structure throws upon the Functions of the Cerebellum.

Perhaps no subject in the whole range of Physiology has been so prolific in theory, and barren in results as the office of the cerebellum has been. Hypothesis has been piled on hypothesis, theory after theory has been skilfully constructed upon these, the building seemed complete and lasting, when Fact—that ruthless iconoclast—stepped forward, and the structure has tottered and tumbled down as a house of cards.

Dr. Strachan after preparing upwards of 300 brains according to Lockhart Clarke's process, examined the cerebella of 84 different animals: 240 microscopic preparations accompany the Thesis, so that he gives ocular demonstration of the truth of his assertions. We must content ourselves by giving a brief statement of some of the chief results of these investigations.

1. The elementary structures and arrangement, unlike those of the cerebrum, are uniform in all the cerebella examined. However numerous the folia, however much they vary in their comparative length and width, in being smooth or serrated, the elementary arrangement of each leaflet is invariably the same, *i. e.* 1. A white medullary substance sending up processes into the cortical grey matter which covers the foliated surface of the cerebellum. 2. An inner grey layer separated from the outer one by the somewhat pyriform nerve cells of Purkinje. 3. Even the corpus dentatum is persistent in all the brains examined; though in the crow and seagull, the corpus dentatum is represented by a cluster of multipolar cells, scattered amid the central white matter.

2. In the inner grey layer of the cortical substance there are an immense number of minute bodies thickly embedded

in plasm. These have hitherto been considered by physiologists as free nuclei. Dr. Strachan, however, shews that these are not free nuclei, but that each one is surrounded by a differentiated mass of plasm, so that it may be defined as "a nucleated mass of plasm."

3. Gerlach ("Microscopische studien") gives a diagramatic section of what he believes to be the arrangement of the fibres of the cerebellum. He has not *seen* this arrangement, it is what he *imagines*. He thinks that these fibres on entering the grey matter divide and sub-divide so as to form a minute net work, and that by these meshes the minute bodies of the inner layer are connected together, and again, that these are further connected with the nerve cells of Purkinje. In sections of the cerebellum of the Jew-faced monkey, and also of the Australian parrot, the writer so far confirms Gerlach's views, as that it is shewn that nerve filaments are continuous with the processes of the nucleated masses mentioned above.

4. There is a great difference in the relative thickness of the two layers of grey matter in various cerebella. This will at once be seen in the subjoined table. No one can glance over it without being struck with—1*st*, the remarkable variation in the relative thickness of the inner and outer layers in different brains; and 2*nd*, the fact that though in man these two layers are of about equal thickness, in all the other cerebella examined (with the strange exception of the Bishop-bird of South-Africa), the outer one is the thicker of the two. It may possibly be found that the modification in the function of the organ depends to some extent on the relative thickness of the two layers.

5. The cerebella of male and female linnets are carefully compared with those of mule linnets, and they are found to be identical in structure and arrangement; histology therefore in this case throws no light on the alleged sexual function of the cerebellum, for congenital impotence is in no way indicated by the intimate structure of that organ.

6. The number, size and complexity of folia are in direct proportion to the variety and complexity of motion. This importart formula is illustrated by a great number of facts, all of which tend to show that one, at any rate, of the functions of the cerebellum, is the co-ordination of muscular action.

Dr. Strachan, we believe, intends examining exhaustively the cerebellum of the reptilia, as it is in these that the

muscular action is of the simplest and least complex form. We need only add that we shall be happy to make public his investigations into this interesting and important subject.

Table of Measurement of the inner and outer layers of the grey matter of the cerebellum (× 250 *linear.*)

NAME.	INNER.	OUTER.
Magpie	1/166	1/100
Crow	1/166	1/83
Sea-gull	1/200	1/83
Wigeon	1/200	1/125
Heron	1/166	1/71
Pheasant	1/250	1/166
Sparrow-hawk	1/166	1/100
Sparrow	1/500	1/250
Duck	1/250	1/100
Snipe	1/250	1/166
Love-bird	1/250	1/166
Bishop-bird	1/166	1/200
Robin	1/250	1/225
Ox-eye	1/400	1/140
Linnet	1/500	1/250
Mallard	1/166	1/83
Black-bird	1/400	1/200
Tufted Pockard	1/166	1/83
Bull-finch	1/125	1/100
Gold-finch	1/500	1/200
Canary	1/500	1/200
Chicken	1/166	1/83
Cardinal	1/400	1/112
Green Parrot	1/166	1/100
Grey Parrot	1/166	1/71
Weaver bird	1/166	1/125
Ringdove	1/200	1/100
Avadavine	1/500	1/166
Wood Pigeon	1/250	1/83
Squirrel	1/250	1/100
Mouse	1/400	1/166
Rat	1/250	1/166
Laughing Jack-ass	1/150	1/80
Cat	1/250	1/100
Kangaroo	1/250	1/125
Colley Dog	1/166	1/83

RECENT CONTRIBUTIONS TO THE LITERATURE OF ASIATIC CHOLERA.

1. *Epidemic Cholera in the Bengal Presidency.* By JAMES L. BRYDEN, M.D., Surgeon Bengal Army, Statistical Officer attached to the Sanitary Commissioner with the Government of India. Calcutta: Office of Supt. of Govt. Printing. 1869.
2. *A Treatise on Asiatic Cholera.* By C. MACNAMARA, Surgeon to the Calcutta Ophthalmic Hospital. London: John Churchill and Sons. 1870.
3. *Statistics of Cholera.* By EDWARD BALFOUR, L.R.C.S.L., Deputy Inspector General of Hospitals, Madras Army. 2nd Edition. Madras: Athenæum and Daily News Office. 1870.
4. *Address to the Bengal Branch of British Medical Association.* By J. MURRAY, M.D., Inspector General Indian Medical Department. Calcutta: *Indian Medical Gazette,* March 1870.

(Continued from page 499, *Vol. I.)*

IT is with a sense of relief that we turn from the ponderous Blue-book containing Dr. Bryden's report, to the clearly printed, and practical treatise by Mr. C. Macnamara, Surgeon to the Calcutta Ophthalmic Hospital.

Mr. Macnamara is not only an accomplished ophthalmic surgeon, as his labours in that special branch of professional work abundantly testify, but beyond his specialty, he is known to the public of Calcutta, and to the profession, as a sound and sagacious practitioner in the every-day work of the profession. As Civil Surgeon of Tirhoot, and as a private practitioner in the city of Calcutta, his opportunities of studying the natural history of cholera in a practical point of view have been very considerable, and we are bound to say that the most has been made of them, especially in regard to his researches on the special pathology of the disease.

Mr. Macnamara divides his work into sections. The first section defines what is meant by Asiatic cholera. The

second section is chiefly historical, and affords an excellent resumé of the earliest records of cholera, and of the progress of the epidemics which have from time to time overstepped Indian boundaries. The third section treats of the "geographical distribution of cholera." The fourth of "the bearing of meteorological influences upon the spread of cholera." The fifth on the characteristic features of Asiatic cholera. The sixth and seventh on the pathology of cholera. The eighth, on its etiology, and the ninth, and concluding section, relates to the symptoms and treatment of the disease.

The second section occupies in space by far the largest portion of the book, and contains a very complete history of the great cholera epidemics of this century, not only as they affected India, but other countries as well. As regards the history of the disease in India, Mr. Macnamara has largely availed himself of the records of the Bengal Medical Board. He accounts for the minuteness with which this historical section of the work has been put together in the following explanation :—

"The question has already been put to me more than once, as to the practical advantage of entering into these details, regarding the course taken by various epidemics of cholera in their passage over India, and from thence to Europe and America. It appears to me, however, that this is one of the most important subjects we can possible study in connection with cholera ; for by accurately defining the various outlets from India which have from time to time been taken advantage of by this insidious enemy to mankind, we may hope to bar its exit from its breeding ground on future, occasions ; and supposing it eludes our vigilance here, we may still, though with less hope, trust to thwart its advance along its accustomed course, provided we are thoroughly acquainted with its habits. Moreover, the laws which regulate its production beyond India must govern its spread from place to place, and from man to man in this country, but here the fact of its being endemic in many localities very considerably complicates the case ; and it is with the hope of throwing some light upon this difficult subject, that I have attempted to decide the phenomena presented by the disease in Europe as well as India."

We think Mr. Macnamara has decided wisely in not confining his historical notices to India alone. We have already seen in regard to Dr. Bryden's book how fallacious cholera statistics, which refer only to the Army and Jails of India are, and that India is not yet in a position to afford

trustworthy data as regards her civil population. The data are here, but we have too few of intelligent and trained observers to record the phenomena.

Mr. Macnamara, as the result of his historical investigation, comes to conclusions which in the main are wholly opposed to the theories advanced by Dr. Bryden. He believes that cholera is essentially a disease "capable of being disseminated over the world through the instrumentality of the feces of those who have suffered from the disease." He is not inclined to lay so much stress as Dr. Bryden does on the influence of monsoon winds in the distribution of the disease, nor does he agree with Dr. Bryden in thinking that the germ is earth-born and aerially conveyed, or that it has an existence independently of man. On the contrary, our author holds, that when the Indian Government have ceased playing at the manufacture of amateur Sanitary Commissioners, the question for its consideration will be "Shall cholera be allowed by our mismanagement or neglect to become permanently localised throughout the civilized world?" Mr. Macnamara holds that cholera is a preventible disease, and that the sooner we begin to turn our attention to rational modes of prevention in the land of its birth, the better will it be. Many reasons are given in favor of the view propounded by the late Dr. Snow, that the use of impure water is the more usual mode in which the disease is propagated in India; and when we consider how perfectly hopeless a task it is to persuade a native that water is a thing capable of pollution, it is scarcely to be wondered at that a contaminated water-supply should be a common, if not the only vehicle, by which cholera is diffused.

Regarding the geographical distribution of cholera, Mr. Macnamara points out that the only countries which have up to the present time remained free are Australia, New-Zealand, and the islands of the Pacific, the Cape of Good Hope, St. Helena and Ascension; the Azores, Bermuda, Iceland, the Farœ, and Orkney and Shetland islands, and also the western coast of Southern America. He discusses also a subject which Deputy Inspector General E. Balfour made familiar to us some years ago, viz., the exemption of certain localities in India from the influence of cholera. The case of Mount Aboo, which is given as an exempted locality by Mr. Macnamara, no longer holds good, for Dr. W. S. Moore relates in his annual review of

Dispensaries and Hospitals in Rajpootana for 1869, the fact that the disease was brought up the hill plateau in 1869, by travellers from below. Most of the hill ranges in Southern India are wholly free from cholera, and the disease, if accidentally introduced, seems to be unable to thrive on our hill plateaux. A few cases occur almost every year either at Coonoor or Ootacamund on the Neilgherries, but the disease is not propagated there.

The Shervaroy Hills overlying the Salem valley—the latter locality noted for the frequency of cholera—afford another case in point. Here cholera frequently prevails below, and occasionally visitors on the Hills to the low country are attacked, but the mysterious power of communicability which characterizes the disease in other places is lost.

The town of Honore on the western coast is another well marked instance of exemption. Since the time Mr. Balfour gave an account of it, up to the year 1861, when the province of North Canara was transferred to the administration of Bombay, the exemption had continued.

Mr. Macnamara is disinclined to believe that these exemptions are due to any peculiarity of soil, for he remarks that while the laterite soils in the southern Presidency have been noticed for their immunity from cholera, the same kind of soil in Midnapore, Banchora, and Raneegunge, within the field of endemicity in Bengal, gives no immunity.

He instances also the laterite of the Deccan as a locality not spared by cholera, but in truth this locality is a very limited one in extent, and as it so happens, the town and district of *Bedur*, which occupy the lateritic tract, are remarkably free of cholera. And as regards Midnapore, there is the authority of Dr. Bensley, a resident medical officer, who thinks that as regards *frequency* "there is truth in the "idea that cholera is neither so frequent nor so violent in "the laterite country as in the alluvial." It can hardly be expected that residence on a laterite soil, which may be a mere mound of a few feet in elevation above the surrounding tract of alluvial, will confer immunity from cholera ; but that lateritic soils are, as a general rule, inimical to the advance of cholera, is, we think, a fact tolerably well established.

We may instance the position of Madras, which occupies twenty-eight square miles of sandy alluvial on the Coromandel coast, as a site favouring the production of cho-

lera. Using the word "endemic" in the sense which Mr. Macnamara applies to it, viz., as a term applicable to a disease common to the inhabitants of the country, we may safely say that cholera is an endemic disease as regards some *portions* of the twenty-eight square miles of surface on which the town of Madras stands. A few miles inland from the coast, both to the north and south of the city, the sedimentary laterite crops out from beneath the alluvial; and it is a well ascertained circumstance that in some stations situated upon this lateritic formation, such as St. Thomas' Mount, Poonamallee, Palaveram, Chingleput and Tripassore, cholera no longer appears as an endemic, or common disease. The distance from the native town of Madras to Palaveram or Poonamallee, is not more than ten miles, and the difference in regard to cholera between Madras and these stations is, that in the one case it is rare for a month to pass by without cholera occurring, while in the latter, an outbreak occurs only at rare intervals, with, generally, periods of many years of complete immunity.

It is an undoubted fact we believe, that lateritic soils never give rise to guinea-worm, or the fungus foot disease described by Carter. We have never met with a case of guinea-worm in a permanent resident of a lateritic district, and we have some reason to suppose that the residents on such a soil are not liable to elephantiasis.

The fact is, we need not go far to seek for an explanation why a laterite soil should be favorable to health.

Its surface is usually permeable to air and moisture, though not to the growth of vegetation, and the subsoil water filtering through it down to the spring levels, is possibly acted upon chemically by the oxides of iron in the soil; for it is a remarkable fact that all wells sunk in laterite soils yield water which is peculiarly free of putrefying organic particles.

Wells on laterite may be dirtied and fouled by native use as in all other strata, and evil consequences may result from such fouling; but as a matter of fact, nature has provided for the residents on laterite soils one of the safest and most efficient of filters, if they will only use it rightly. That, as a rule, the water of such localities is sufficiently filtered by the soil, before the inhabitants drink of it, is probably a very satisfactory explanation why cholera, and the diseases

which are influenced by bad soil and water, such as guinea-worm, elephantiasis, &c., are non-existent, or less felt in such localities.

The mere fact of cholera occurring in a few localities within the Gangetic delta, where the laterite protrudes on the surface, is no reason for doubting the general truth of the law that a lateritic surface is favorable to health, inasmuch as wherever it exists, the water supply filtered through the soil is unquestionably pure and wholesome. As regards Midnapore and Raneegunge for instance, it is not shown by Mr. Macnamara whether the people drink water from laterite wells or from tanks in the alluvial.

Dr. Bensley thinks that the stations on laterite suffer less from cholera than those on alluvial, or other formations. Here in Madras we accept the fact, other things being equal, that a town or cantonment on laterite will not retain cholera in the same way that an alluvial soil does, and that it will not breed guinea-worm or elephantiasis. In the endemic field of Bengal, other influences may prevail which would tend to mask the influence due to a limited area of laterite soil.

But we must not be tempted to linger on this theme of the influence of soil on disease, but pass on with Mr. Macnamara to note the exemption of the Ghoonds of the hill tracts of Orissa, and the Santhals and other wild tribes of Chota Nagpore and Bengal.

The hill tribes in every part of India are afraid of the plains, and of the human tyrants who in ancient times drove them to take refuge in their hill fastnesses. The orthodox Hindoo, on the other hand, looks upon the hill man as a creature whose presence defiles a spot, and whose touch is contamination.

The hill man, in his native home, even in the endemic field of cholera, does not suffer from epidemics. The monsoon winds, which according to Dr. Bryden waft along the poisonous vapours from the Gangetic valley, pass over the Santhal country and Orissa without leaving any traces of cholera; though the people of the plains may be dying by thousands, the hill tribes remain healthy. But bring a dozen hill men down to the plains, and lock them up in a jail within the endemic field, and the chances are about two to one, that, within a month, the whole number will be attacked by cholera. Their immunity in fact lasts just

so long as they are in quarantine, living in their hills isolated from the people of the plains. On coming into contact with cholera, these people seem to suffer more severely than those who have lived all their days within the endemic field.

Exactly the same thing occurs with the hill tribes of Southern India; they dislike the low country, and rarely visit it, owing to their dread of the diseases to be acquired there. A sentence of simple imprisonment on such people, in a jail of the plains, is equivalent to a sentence of death. Mr. Macnamara very properly points out that the population of Nepaul and the Himalayahs are not spared by invading cholera, because they are not isolated from the people of the plains, as are the wild tribes of the hill ranges in Bengal. The Nepaulese being Hindoos, flock to places of pilgrimage, and mix with their brethren of the low country, while the Santhals have no communication with the people of the plains, if they can help it.

(To be continued.)

MEDICAL MISCELLANY.

Notes from Japan. By H. Ernest Schmid, M.D.

WHITE PLAINS, N. Y.

One of the most beautiful islands that compose the insular empire of Japan is unquestionably the southernmost of its group—the mountainous (but to the mountain tops fertile), evergreen Kiusiu. To the traveller especially, who has just left behind him the low lands, that stretch out on both sides of the Yang-tse-kiang—so low, that they remind one of Thomas Hood's "flatulent" Holland—and who has passed the numerous barren and rocky isles that skirt the Chinese coast, it appears as if a terrestrial paradise was opened before his enraptured eyes, when approaching the beautiful *Niphon*.

The slopes of hills and mountains on every side are either covered by magnificent forests or cultivated in terraces to the very summits. Rice fields and tea hedges are everywhere. Numerous small but ever-living streams supply the water for irrigation at all times in abundance. The sea forms, besides the beautiful harbour of Nagasaki, many fine bays of smaller extent, and pretty coves, all teeming with myriads of various kinds of delicious fishes.

The natives of Kiusiu are generally small in size, far inferior in that respect to their near neighbours of Northern China, but possessing like them the lymphatic temperament, slow to take on inflammation, and being therefore excellent subjects for surgical operations. Unlike the Chinese, however, they are ever ready to acknowledge superiority in whatever it may exist, amongst foreigners, and are eager to adopt improvements. They are bright, quick in understanding, extremely polite and courteous, kind and obliging, hospitable and convivial. They are greatly given to feasts, holidays, festivities and convivialities generally. In fact the fondness for strong drink is fostered to such a deplorable degree, that it has been stated, and my experience forces me to add, "with but too much truthfulness," that every night sees three-fifths of the inhabitants of Nagasaki intoxicated. And they number nearly 80,000.

The liquor called "saki," which they prepare from rice, is a fiery drink rapidly inflaming the brain, and in a remarkably short time coloring the face and whole head with a perfect crimson hue. Everybody, regardless of age and sex, drinks saki. And everybody

likewise devours daily quantities of confectioneries. It is astonishing to see how great the number of stores where these hurtful delicacies are kept for sale. A household seems never without some of them, for it is the custom to offer them to every guest, as soon as he has been served with the stereotyped cup of tea (without sugar or milk), and the tray containing burning coals and ash-box for his pipe. I would state here in parenthesis that custom furthermore requires the guest to wrap up the amount of dainties in a sheet of white paper, on which they are presented to him, and take them with him, if he does not care to eat them during his visit.

The climate is very mild. During a two years' residence I saw snow only once, and then it lasted scarcely two hours. But the effect produced by the luscious oranges shining through the leaves, covered with this unusual visitor, was exceedingly novel and striking. Ice I have never seen there. It only forms occasionally in little icicles during a cold, north-west storm in some place exposed to it and not touched by the sun's rays. Kiusiu has a rainy season of from thirty-five to forty-five days, during which it rains incessantly, and does so the rest of the year besides a good deal, so that yearly an amount of rain falls which is not reached in any other place on the globe where meterological observations have been made.

In the great consumption of rice, fish, confectioneries and saki, in the manner of dressing, and in the damp climate, we find the principal causes for the prevalent disorders met amongst that people.

Making rice their main article of diet, they are, like all Eastern nations who live in the same manner, greatly troubled with flatulence. At certain festivals they prepare a peculiar rice-cake, in the preparation of which this grain is converted into an almost india-rubber-like substance, so indigestible and injurious to the economy, that its use is invariably followed by perfect epidemics of purulent ophthalmia and pustular eczema. Strange to say, many of the people know this and yet they continue to eat it, not because it is pleasant to their palates to a very great degree, but simply because custom demands its preparation on certain occasions.

Fish, which figures next to rice on their diet-list, becomes, under some circumstances, a fruitful source of disease. It is prepared too often so as to be as unfit for the stomach as the above-mentioned rice-cake. And in certain very poor communities the people eat it still after it has become half decayed; nay, they scarcely ever consume it at all, except thus damaged, since their poverty does not permit them to purchase the more expensive fresh and sweet article. I am convinced that to it must be attributed in a great measure the production of so much leprosy found in those very places. And by this term I do not mean the scaly eruptions, called

Lepra Græcorum and L. Squamosa, nor the Pachydermia (Elephant. Arabum, Barbadoes leg), for the scaly disease is tolerably harmless and the Pachydermia are mostly restricted to the legs and scrotum, or at any rate to single parts—but I mean the real leprosy (L. Arabum, Elephant. Græcorum), which attacks chiefly the face, hands and feet, and manifests itself in the following forms :

1. *Lepra Tuberculosa* producing tubercles in the skin of flesh color.
2. *L. glabra* and *anæsthetica* accompanied by loss of sensibility, generally with discoloration of the skin.
3. *L. articulorum* and *mutilans*, causing loss of members, vesicles on the joints, the eyes, &c.
4. *Morphœa*, making spots upon the skin, commonly white (M. alba), but also brown or black (M. nigra).

In my inquiries after the existence of *Leprosaria*, I could only learn of one, at Miaco, the great city of Nipon, where the supreme Mikado resides. This institution is supported by the people, independent of the government. There the lepers receive medical treatment. These miserable beings are very numerous in Miaco, very scarce in Nagasaki, but count largely again in Amakura, in Omura and Ch'Kngo. In the latter place, built upon the low marshy banks of a river, which in its frequent inundations leaves constant large pools of water standing between and underneath the houses, the people live on scarcely anything else but this cheap, because damaged, died fish, and hardly a single family can be found there free from leprosy.

In my daily clinics I have noticed of the four above-enumerated forms most frequently the L. mutilans and articulorum. It may be of interest to mention here, that this L. mutilans shows a very peculiar feature in Southern Africa. There, namely, the diseased joints do not drop off as they do in Japan, leaving a stump just as if amputation had been performed ; but they seem to melt away, or shorten away, so that when, for example, the first joint of a finger is lost, the nail is not lost with it, but is found on the second joint.

In Nagasaki leprosy is only sporadic ; in all the other named places it is decidedly endemic.

Amongst its most evident causes stands first, inheritance. *Contagion* has been called a cause, but as far as my own observations go, it can hardly be considered one. Even sexual intercourse does not seem to impart it. A damp and changeable climate and an unhealthy diet have much to do with its production. In fact, it has appeared to me that the greater the dampness of climate and the marshiness of the soil, the poorer the people living on it, the more damaged their food, the greater the numbers of leprous families. Of the various therapeutical means employed by the native physicians for this disease, I found principally used the Chinese

medicine, taifushi. The meaning of the Chinese character for it is: "Great Maple Sun." It is an oily substance made of the nuts of a tree. As prepared in Japan, it is of a brown color; whereas, the Chinese article is white. It is used externally—rubbed on the sores. Another remedy employed is the Hakusha, a native red flower. This is given with the brown cooked inside of a deer's head."* Another still is the Tasf'snhi san ks'rai made into pills rolled in gold leaf. But of late the best physicians give the taifushi with quinine.

There exist no laws in Japan about lepers, yet they are, by common consent, a proscribed class, who are forced to stay by themselves, because no one in good health will admit them into his house, more especially if they are very sick. It is, therefore, perfectly impossible for a leper to marry into a non-leprous family. No healthy woman in Japan will share a leper's bed and board.

All records on that malady date its first appearance in Japan only as far back as from about 1234-50.

No treatment is of any avail, not even in the lighter forms, because the patient have no means of changing their mode of life.

But all kinds of skin diseases are prevalent amongst the Japanese, affording an unsurpassedly rich field for study in this specialty. From numbers of interesting cases I select only two on account of the rarity of their occurrence. *One,* a genuine case of *Kelis vera,* occurring in a girl (Onoshi) 20 years of age. It was of remarkably large size, measuring in its locality on the back, between the shoulders, from above downwards seven inches, and from side to side four and a half inches. According to Wilson, the total number of recorded cases amounts to only 24, of which he himself saw 7. But it has been described in a few more instances in Ireland, and Hebra also swells the number. My patient took for some time Donovan's solution without any change in the disease whatever, but experienced great relief from the burning pain in the abnormal growth by the constant application of an ointment made with the iodide of lead.

The second case alluded to was an hypertrophy of the skin of the penis, strange to say scarcely involving the scrotum at all. It gave to the organ the appearance of an elephant's trunk, being, like as this is generally held by that animal, a little bent at the end, with the meatus enlarged until it had become as wide and thick-lipped as the man's very mouth itself. He, of course, could no longer indulge his sexual desires, and for this reason came to consult me. I had some life-size drawings made for this remarkable penis, especially since no books speak of such disorder of this member, and because it only occurred in one more instance on the whole island as far as the memory of the present generation goes.—*N. Y Medical Record.*

* Such is the literal translation of the Chinese character for the medicine.

Case of Version by external manipulation. By MADAME PUEJAC, Head Midwife at the Montpellier Maternité.

SCARCELY a dozen years have passed since version by external manipulation became universally known to accoucheurs. Even now the method, though unopposed, does not receive the favor which it deserves, although Wigaud in Germany has published some very noteworthy works upon the operation, and Mattéi in France has come forward with enthusiasm and eloquence as its advocate.

This resistance on the part of some practitioners is undoubtedly based on certain theories, sound we admit, but exaggerated, put forward by some authors, which paralyse the efforts of those who receive innovations with caution. We read in Cazeaux that the integrity of the bag of waters is generally indispensable to the success of external manipulation. Farther on the same author says again that after the rupture of the membranes the operation is admissible only in oblique postures when the head or the breech is close to the cervix, when the membranes have been but a short time broken and a certain amount of water still remains in the uterus. Even under these circumstances great caution should be used, and the attempt should not be long continued.

In 1865, a friend of mine, Mademoiselle Resseguin, published a case in the *Gazette Médicale de l' Algérie* which shows that spontaneous version is practicable even after the rupture of the membranes and with a transverse presentation well established.

The following is another of the same kind. Caroline F., multipara, aged 34, was admitted to the labor-ward at 7 A. M. on the 4th May. Membranes had been ruptured more than an hour; the liquor amnii was escaping at each contraction, though in small quantity. The pupil on duty came to call me; she suspected a faulty presentation. I went up to the ward, and by auscultation and abdominal palpation I satisfied myself of the existence of a shoulder presentation; the head was in the left iliac fossa, and the heart-sounds extended in the median line upwards for four finger-breadths. Introducing the index finger into the vagina, I was able to reach, not without difficulty, a little prominent tumor which I recognized as the right elbow. I sent word to M. Dumas, and while waiting for his arrival, I had the patient placed on her back, and with my hand resting on the left iliac fossa, I began to attempt to rectify the position of the fœtus. M. Dumas arrived, confirmed my diagnosis and authorised me to continue my efforts. It was then 9 A. M. I tried to put the patient into such a position that a solid body interposed between the lower part of the abdomen, and the bed should push the fœtal head backwards. But I was aware that pressure, however well directed, was not so valuable as

manipulation. I selected a certain number of pupils, to attend upon the patient in turn; all internal examination was prohibited lest the flow of liquor amnii should be increased. I merely ascertained from time to time, through the abdominal walls, whether the head was descending. It is unnecessary to add that before manipulation the rectum and bladder had been emptied. At four o'clock in the afternoon, being unable to feel the head, I made a direct examination and discovered, above the os, which had made no progress in expansion since morning, the fœtal head still high, slightly movable, but completely perpendicular to the plane of the superior strait.

The patient was tired, but less so than one should have supposed. The manual pressure need not be too powerful, if it be continuous and applied in the proper direction. It is useless to use means which would irritate the uterine muscles, add strength to their contractions, and inevitably lead to the discharge of the liquor amnii. I had the patient put lying in a large bath, and took care that sufficient nourishment was given to her. Labor did not set in decidedly until noon of the day but one following. The child was born at four in the evening with the same mechanism and the same revolutions as if the head had presented in the first instance in the first position or left occipito-iliac. The child was of average size and healthy.—*Révue Médicale.*

Case of External Version.

Dr. B. C. Riggs, House Physician Bellevue Hospital, reports the following as illustrating the benefit of external verson: Ellen P., æt. 35, a native of Ireland, having borne five children, all of whom presented normally, was seized with labor pains at 9½ P. M. April 27th, 1869. Her last menstruation occurred early in July, '68. With the first pains the waters escaped. When she was seen half an hour later, there had been but three distinct uterine efforts of which she was conscious, and these slight ones. The long axis of the uterus was evidently transverse and its walls flaccid. The fœtal heart could be heard most distinctly just below the umbilicus, and the head was thought to be felt in the right iliac fossa. On examining, the right hand and arm were found in the vagina, palm looking forward and thumb pointing to the mother's right thigh. Dilatation of the cervix had proceeded so far that the os would probaly have measured two inches in diameter. Chloroform was at once administered, and passing my right hand into the vagina, I introduced all four fingers within the cervix. By manipulations from outside made by an assistant, the breech was pushed up and the head down, while by the hand in the vagina efforts were made to move the presenting part from the right to the left of the uterus.

The ribs were first touched and were pushed up. Then, by means of the arm which was down, the right shoulder was brought within reach. The arm was then returned into the uterus : and, all my fingers except the index being withdrawn from the cervix, I placed my thumb upon the acromion, and index finger in the axilla. With the aid of pressure from without upon the head and breech such motion was imparted to the shoulder that quite suddenly the head slipped into place over the superior strait of the pelvis. In turning the body had so rotated that, although the fœtal abdomen was originally towards the mother's, the occiput now pointed forward. The operation up to this time occupied about ten minutes, and during it only one short and feeble pain occurred. For about two hours pressure had to be continued against the breech before the uterine efforts were sufficiently forcible to cause fair engagement of the head. After this the labor proceeded easily and rapidly to its termination, the head emerging in the right occipito-anterior position. No bad symptoms have appeared since delivery, and the condition of both mother and child is at present entirely satisfactory. Before entering upon the operation a consultation was held of the house staff. All those who were present made examination of the case per vaginam, and all advised the immediate action which was adopted.

French Association against the abuse of Tobacco.

Subjects for prizes for the year 1871.—1. History of the use of tobacco before its introduction into France. 2. Are there any assignable limits between the use and abuse of tobacco ? 3. The influence of tobacco smoke upon non-smokers. 4. The effects of tobacco on workmen employed in its manufacture. 5. The influence of tobacco upon the vocal organs and the use of the voice. 6. The relations between the abuse of tobacco and the abuse of alcoholic drinks. 7. The influence of the use of tobacco upon domestic and social relations. 8. The means by which industrial leaders may be induced to prevent their employees, and above all their children, from smoking. The prizes are medals of silver-gilt, silver or bronze, according to the merit of the essays. Rewards will be decreed, besides, to persons who shall have sent in the best papers for the Report, or who may have contributed most to the advancement of the cause. Prize essays are to be sent to the President of the Association, No. 5, Rue Saint Benoit, Paris, on or before the 31st December 1870.—*Jour. Des. Con. Med.*

MEDICAL INTELLIGENCE.

(General Orders by the Governor in Council.)

Warrant Officers—Allowances—Leave.

G. O. G. No. 84 of 15th March 1870.—The following extract from General Orders by the Government of India is republished:—

It is hereby notified that the allowances of Warrant Officers of all Departments, whether holding Honorary Commissions or not, who may be absent on leave in India, as also the allowances of those acting for such absentees, will be regulated by the rules applicable to Commissioned Officers.—(G. O. G. G. No. 265 of 1870.)

Officers—Passages—Furlough on M. C.

G. O. G. No. 108 of 5th April 1870.—The following extracts from General Orders by the Government of India are republished:

Fort William, the 23rd March 1870.

In continuation of G. G. O. No. 1109, dated 10th November 1869, the Right Hon'ble the Governor General of India in Council is pleased to declare that Officers of the Indian Army who may be entitled to passage money under the rules of the Indian Military Funds when proceeding to Europe on furlough on medical certificate, will, if they desire it, be provided with accommodation in Her Majesty's troopships when available.

All such Officers serving in the three Presidencies for whom passages may be available, and who may not be prevented under the circumstances set forth in the 2nd, 3rd, and 4th Clauses of paragraph 2 of the G. O. quoted above, will proceed to Bombay for transport; free conveyance by rail for themselves and for their families being allowed. Officers embarking under these circumstances will be reimbursed the amount of deduction on account of table money on board the troopships.

2ndly.—When a Medical certificate may declare a passage overland to be positively dangerous to health and a long sea voyage essentially necessary.

3rdly.—When a Presidency Medical certificate may, in like manner, declare that an immediate change to England is urgently necessary, and that the case will not admit of delay until a passage in one of the troopships can be provided.

4thly.—When suffering or recovering from a disease of a contagious nature which a Presidency Medical Board certificate may declare as not admissible on board a troopship.

When, however, troopships are not running, or accommodation may not be available therein, and in cases where Officers may prefer to make their own arrangements for proceeding to Europe, they will proceed as heretofore under the rules of the several Military Funds to which they may belong.

In order to obviate delay and inconvenience, Officers who may be desirous of proceeding in Her Majesty's troopships are to intimate that intention in their applications for leave, so that passage may be at once secured for them if practicable, or such timely information given as will enable them to make other arrangements.—(G. O. G. G. No. 338 of 1870.)

Officers—Europe Leave—Embarkation at Madras.

The 25th March 1870.

With reference to G. G. O. No. 103 of the 26th January 1862, it is hereby notified that Officers of the Madras Army serving in Bengal who have obtained furlough to Europe on private affairs or medical certificate, will, if they desire to proceed via Madras, instead of from Calcutta or Bombay, be allowed to reckon such furlough from the date of embarkation at Madras, provided that the preparatory leave of thirty days allowed under existing regulations is not exceeded at the time of embarkation.—(G. O. G. G. No. 346 of 1870.)

Remittances.

G. O. G. No. 132 of 3rd May 1870.—The following Memo. from the War Office, dated 15th November 1869, is published for general information:—

"The Secretary of State for War has decided that in future no Remittances shall be allowed to be sent home from India through the Remittance Return (War Office Forms 327 and 327 A) for other than the following purposes.

1. Remittances from Officers for the use of their Parents, Wives, Children, Brothers and Sisters, Fathers and Mothers-in-law, Step-Fathers and Step-Mothers, Brothers and Sisters-in-Law, and half Brothers and Sisters.

2. Remittances from Soldiers for the use of their families or personal friends. A Soldiers can remit to the extent of the Net

amount of pay and allowances which have accrued to him since the last Remittance he made, and not exceeding the Net amount of his pay and allowances for one year past. The rate of exchange is 2s. $0\frac{1}{2}$d. the Rupee.

3. Remittances to Tradesmen for necessaries supplied before the 1st September 1864.

4. Remittances to the Secretary of State for War for credit of the public.

Any other description of Remittances than those above enumerated will be disallowed, and the money will be returned to the Remitters. Officers allowing irregular Remittances to be made will be held responsible for any inconvenience or loss which may thereby occur.

Dress—Officers—Indian Medical Department.

Under the authority of Her Majesty's Government, the Right Hon'ble the Governor General in Council is pleased to direct that the following dress shall be adopted by the Indian Medical Department :—

For Commissioned Officers.

* Coat—tunic, scarlet, single-breasted, with black velvet collar and cuffs ; pointed with $\frac{1}{2}$ inch lace and tracing braid for different ranks. For Assistant Surgeons, laced with one bar of lace, half an inch wide, up to a point seven and a half inches in height, traced oustide with gold Russia braid, finishing with an Austrian knot at top, making it nine and a half inches high and showing a light of $\frac{3}{16}$ of an inch of scarlet cloth between the lace and braid, also traced inside with gold Russia braid, finishing down the cuff with crow's foot and eye, showing a light of $\frac{3}{16}$ of an inch of the facing cloth between the lace and braid. Assistant Surgeons after 6 years' service to have two bars of lace, showing $\frac{1}{4}$ inch light of the facing cloth between each, the top bar coming to a point 8 inches high, traced and finished at top and bottom of the lace bars as the Assistant Surgeons under 6 years' service, the top tracing and knot extending 10 inches high. Surgeons with the round eyes on the top of lace, showing $\frac{3}{16}$ of scarlet cloth between the lace and eyes. Surgeon-Majors have the eyes also below the lower bar of lace, showing $\frac{3}{16}$ of the facing cloth between the braid and lace ; the skirt 10 inches deep, for an officer five feet nine inches in height, with a

* The Coat for Inspector General of Hospitals is of the same pattern as that prescribed for General Officers of corresponding rank ; the lace to be of "Staff Pattern."

variation of $\frac{1}{4}$-inch longer or shorter for every inch difference in the height of the wearer; two plates on skirts behind, edged white, with two buttons at waist; the skirt closed, behind quite plain; the collar and front of coat edged with white $\frac{1}{4}$ inch wide; the skirts lined with white; on the shoulders a plain double gold square cord to button at top of shoulder, with a small button at bottom sewn on to the shoulder seam; the collar laced round top with lace and gold braid on the collar seam. (Gold braided eyes inside the lace for officers ranking with Field Officers only.) Relative collar badges; thus for Deputy Inspector General of Hopitals after 5 years' service, a crown and star, for Deputy Inspector General of Hospitals under 5 years' service and Surgeon-Major a crown, Surgeon a star (other ranks omitting the braided eyes), Assistant Surgeon with 6 years' service, a crown and star, Assistant Surgeon under 6 years' service, a crown; size of eyes—$\frac{1}{2}$ inch exterior measurement —$\frac{1}{16}$ inch apart.

Lace—gold, two vellum-pattern, half inch width.

Buttons—gilt, with the crown and letters V. R., with the words "Bengal Medical Service," "Madras Medical Service," or "Bombay Medical Service," within a star raised thereon.

† Hat—cocked, plain; the fan or back part seven inches, the front five inches and half, each corner five inches.

† Loop—scale, with regulation button, and black silk cockade.

† Tassels—gold bullion.

† Feather—black cock's tail, drooping from a feathered stem three inches in length. Stock—black silk.

Trousers, Dress—blue cloth, with gold lace two and a half inches wide for Inspector General, and an inch and three quarters wide for Officers below that rank, down outward seam.

Boots.—Wellington.

Spurs—screw, yellow metal, as for Staff Officers, for those Medical Officers who are allowed forage for a horse.

† Sword—The same as for Officers of Infantry.

† Scabbard—brass, for those having the rank of Field Officer; steel, for Officers under that rank.

† Sword-knot—crimson and gold, with acorn tassel.

Sword-belt—black morocco, with three rows of gold embroidery $\frac{1}{4}$ inch wide on the waist belt, and three rows $\frac{3}{16}$ inch on the slings,

† These articles for Inspector General are to be of the pattern for General Officers, the plume will be black.

N. B.—Medical Officers serving with Native Regiments are *permitted* should they desire it to adopt the uniform of the Corps to which they are attached. But it is to be distinctly understood that one or other of these uniforms must be strictly adhered to.

gilt chased clasp with silver lion and crown for Medical Officers ranking with Brigadiers and Major-Generals ; black morocco, with two rows of gold embroidery for Deputy Inspectors General ; black leather with slings and gilt hook for all other ranks—Medical Officers below the rank of Deputy Inspector General are permitted to wear at Levèes, Balls, &c., a dress sword belt similar to that prescribed for Deputy Inspectors General. To be worn over the coat.

Plate—a round gilt clasp, with V. R., surmounted by a crown in silver, upon the centre-piece, and " Bengal Medical Service," " Madras Medical Service," or " Bombay Medical Service," with a laurel branch, also in silver, on the outer circle.

Shoulder-belt—For Medical Officers ranking with Brigadiers and Major-Generals:—black morocco with four rows of gold embroidery $\frac{1}{4}$ inch wide, gilt chased buckle and slide (no breast ornament) pouch of black morocco leather, flap $6\frac{1}{2}$ inches wide, $3\frac{1}{4}$ inches deep, and pointed, with three rows of $\frac{1}{4}$ inch gold embroidery, —gilt chased V. R. and crown ornament. For Deputy Inspector General of Hospitals:—three rows of gold embroidery on the pouch belt, and two on the pouch. For other rank:—black patent leather, with a small case of surgical instruments, according to pattern.

Medical Officers below the rank of Deputy Inspector General are permitted to wear, at Balls, Levees, &c., a dress pouch belt and pouch similar to that prescribed for Deputy Inspectors General.

* Patrol Jacket—as prescribed for Officers of Infantry.

Trousers, Undress—blue cloth, with a scarlet stripe two and a half inches wide down the outward seam for Inspector General, one and three quarter inches for Deputy Inspector General of Hospitals, and scarlet welt for all other ranks.

Boots—Wellington.

Forage Cap—Inspector General and Deputy Inspector General of Hospitals, as for Major General, except that the band is to be of lace of the staff pattern ; gold button and trimming on the top. For all other ranks, blue cloth, with black leather peak and chin strap, black silk oakleaf band, with V. R., surmounted by a crown, embroidered in gold on the front, and with black button and trimming.

Shell-jacket—as prescribed for Officers of Infantry, collar and cuffs of black velvet.

Waistcoat—scarlet cloth, with gilt studs down the front to hook and eye, edged with plain gold braid with crow's feet at each end of pockets.

Great coat—of Infantry pattern, blue cloth, lined with scarlet, with uniform buttons.

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* Inspector General of Hospitals to wear the blue frock coat prescribed for General Officers, with corresponding distinctions of rank.

Horse furniture—bridle, as Officers of Infantry, with brown leather front, and rosettes. Bit without bosses. Saddle cloth for Officers who are allowed forage for a horse, blue cloth, same dimensions as for Infantry Officers, with the lace of black silk, oak leaf pattern one inch wide; two rows of lace for Inspector and Deputy Inspector General. Badges in black silk. Holsters, covered with black leather. Girths, blue Saddle hunting. Assistant Surgeon no badges.

Medical Subordinates—Widows—Pensions.

With a view to obviate any misapprehension on the subject, it is hereby notified that it was intended, under G. G. O. No. 358† of the 25th March 1869, to grant retrospective effect to the provisions of paragraph 27 of G. O. G. No. 550‡ of the 5th June 1868, which applies only to the case of widows of Subordinates of the Medical Department who came on pension on or subsequent to the 1st January 1866, a similar boon having been granted to the widows of Warrant Officers of other Departments by G. G. O. No. 829§ of the 28th August 1868.—(G. O. G. G. No. 618* of 1869.)

The enhanced rates of retiring and invalid pension in the case of Medical Subordinates, under the provisions of paragraph 22 of G. O. No. 550‡ of 1868, have effect only from the date of that order.

* To be substituted for the Order of the same No. and date republished in Madras G. O. G. No. 218, dated 15th June 1869.

† Madras G. O. G. 6th April 1869, No. 123.

‡ Madras G. O. G. 19th June 1868, No. 232.

§ Madras G. O. G. 11th September 1868, No. 357.

Furlough Rules of 1868—Sick leave in extension of furlo'—Pay (proper.)

The following Military letter from the Right Hon'ble the Secretary of State for India, No. 119, dated 6th May 1869, is published for general information :—

MILITARY.
No. 119.

INDIA OFFICE;
London, 6th May 1869.

To His Excellency the Right Hon'ble the Governor General of India in Council.

MY LORD,—Your despatch No. 33 of 26th January 1869 conveys your recommendation that, in future, all Officers who may obtain

leave on sick certificate, in extension of a furlough, shall receive pay (proper) for the third year of absence, whether they be under the provisions of the Furlough Rules of 1854, or those of 1868.

2. I agree with your Government that such a course would be entirely in accordance with the spirit of the Rules of 1868, and it will be followed in the cases of Officers who may choose those Rules; but I am of opinion that it would be inexpedient at this time to make any alteration, as respects those Officers who may remain under the Rules of 1854, in a practice which is in accordance with those Rules, and has been observed in this country since their publication.—(G. O. G. G. No. 629 of 1869.)

I have, &c.

ARGYLL.

Military Officers in Civil employ—Leave.

In explanation and modification of Rule XXXIII. of the Leave Rules for Military Officers, published in G. G. O. No. 1064,* dated the 10th November 1868, the Governor General in Council is pleased to notify, subject to the approval of the Right Hon'ble the Secretary of State, that a Military Officer in Civil employ is not entitled to any other description of leave except furlough under Chapter I. of the said Rules, and privilege leave under Chapter II. of the Leave Rules of the Covenanted Civil Service, dated the 16th June 1868, and that, subject to considerations of State, there will be no restriction as to the place where such Officer may reside when on either of the above descriptions of leave.

With reference to the period of three years mentioned in Rules VIII., XIII., XIV. and XXIV. of the Military Leave Rules, His Excellency in Council is pleased to resolve that as a Military Officer in Civil employ is debarred from taking general leave under Chapter II. of those Rules, the said period shall be calculated from the date of such Officer's last return from furlough exceeding three months. Shorter periods of furlough will, however, be excluded from the three years in question, which must be entirely spent either in actual service or on privilege leave.—(G. O. G. G. No. 630 of 1869.)

* Madras G. O. G. 1st December 1869, No. 434.

Cantonments—Deaths.

The 15th June 1869.

The Right Hon'ble the Governor General in Council is pleased to direct that the following clause be added to the Cantonment Regulations drawn up under Act XXII of 1864 :—

"The head of any house or family in which a death may occur, shall, within 24 hours, report, or cause to be reported, to the Cantonment Magistrate, or, in his absence, to the Officer Commanding the station, the fact of such death, and also the cause to which death is believed to have been due."—(G. O. G. G. No. 645 of 1869.)

Medical Officers of Civil Stations—Furlough—Re-appointments.

The 17th June 1869.

The following Resolution in the Home Department is published for general information :—

Extract from the Proceedings of the Government of India in the Home Department (Public),—No. 2674, under date Simla, the 9th June 1869.

Read a communication from the Military Department, No. 403, dated 9th February last, with enclosures, on the question whether a Surgeon in medical charge of a Civil Station taking furlough under the new Military Rules, will be entitled on his return to resume the same medical charge.

Read circular to Local Governments and Administrations, Nos. 1110 to 1118, dated 26th February last, asking an expression of opinion on the following questions :—

1*st.*—Should a Medical Officer holding charge of a Civil Station be entitled, on return from furlough, to re-appointment to a similar charge, *i. e.*, to a Civil Station, or one of the same class of Civil Stations ?

2*nd.*—Should he be entitled to return to the same station which he held before proceeding on furlough ?

Read the following replies to the above circular :—

* * * * * *

RESOLUTION.—The Governor General in Council having considered the views expressed by the several Local Governments and Administrations, is of opinion that a Medical Officer in charge of a Civil Station should, when proceeding on furlough, retain a lien on some similar appointment, *i. e.*, the charge of a Civil Station of the same class, or some other civil charge of equal emoluments. He should not, as a general rule, have any claim to re-appointment to the same station.

Furlough Rules of 1868—British Officers.

G. O. G. No. 276 of 4th August 1869.—The following extract from a Military Despatch from the Right Honorable the Secretary of State for India, is published :—

Simla, the 14th July 1869.

The following Military letter from the Right Hon'ble the Secretary of State for India, No. 145, dated 10th June 1869, is published for general information :—

MILITARY. INDIA OFFICE ;

No. 145. *London, the 10th June 1869.*

To His Excellency the Right Hon'ble the Governor General of India in Council.

MY LORD,—I forward, with reference to the 6th paragraph of your despatch in the Military Department, No. 239, dated the 3rd June 1868, copy of correspondence with the War Office* on the subject of the extent to which the Furlough Rules of 1868 should be extended to Officers of Her Majesty's British Forces serving in India, and I have to inform your Lordship that Her Majesty's Government have decided, for reasons given in the letter to the War Office, dated the 9th April 1869, that the new Rules can only be made applicable to Officers of Her Majesty's British Forces in the sense in which the Rules of 1854 were made applicable, *viz.*, as regulating the amount of absentee allowance to be granted to such Officers while holding staff appointments.

—(G. O. G. G. No. 747 of 1869.)

I have, &c.

(Signed) ARGYLL.

* Letter to War Office, dated 10th November 1868, No. 6271-990 W.
Letter from War Office, dated 17th March 1869.
Letter to War Office, dated 9th April 1869, No. 1900-335 W.

Medical Officers—Leave—Extra Allowances—Colleges and Lunatic Asylums, &c.

G. O. G. No. 250 of 13th July 1869.—The following extracts from Notifications in the *Gazette of India*, are republished :—

Financial Department, Simla, the 30th June 1869.

No. 1556.

Read the undermentioned letters :—

To the Accountant General, North Western Provinces, No. 1212, dated the 29th February 1868, stating " all extra allowances granted to Medical Officers for the medical charge of Colleges and Lunatic Asylums, &c., should be forfeited by such Officers when absent on leave, and be paid in full to the Officer who actually performs the work.

From the Deputy Accountant General North-Western Provinces, No. 1925, dated the 27th April 1869, enquiring, with reference to the letter quoted above, " whether a Medical Officer on privilege leave may be permitted to draw his extra allowances in the event of their being available."

Resolution.—The above question is answered in the negative.

Order.—Ordered that the foregoing Resolution be published in the *Gazette of India*, and communicated to the Home Department ; the Governments of Bengal, Madras, Bombay, the North-Western Provinces and the Punjab, the Comptroller General of Accounts, the Accountants General in Bengal, Madras, Bombay, the North-Western Provinces, the Punjab and British Burmah ; and the Deputy Accountants General in the Central Provinces, Hyderabad and Mysore.

Pensioners, Civil and Military—Re-employment.

No. 1582.

Read—

Resolution No. 3078 passed in this Department on the 24th October 1868, extending the application to the cases of all pensioned servants of Government, Civil and Military, of the following decision of the Secretary of State :—" When an Officer who has retired on a pension obtained not on medical certificate, but after a prescribed period of service, is subsequently employed in any public capacity, he shall be permitted to draw the pension in addition to the salary of the office to which he may be appointed ; but in the event of the

Military Officer resigning the service after he has been appointed to a Civil Office, he must at the same time vacate that office. He may, however, be re-appointed to the office, not as matter of course, but only in the event of your considering it decidedly for the benefit of the public service."

RESOLUTION.—The Governor General in Council is pleased to rule that whenever any good service pensioner is re-employed under the above order, the previous sanction of the Government of India must be obtained on a full report of the circumstances of the case.

Uniform—Veterinary Surgeons.

The 27th July 1869.

The Right Hon'ble the Governor General in Council is pleased to direct that Veterinary Surgeons of the Indian Army shall, for the future, wear the uniform prescribed for the Veterinary Staff, at page 115 of Her Majesty's Dress Regulations for the Army for 1864, the provision of full dress being left optional.

This order is applicable to the three Presidencies.—(G. O. G. G. No. 784 of 1869).

Officers in England—Sick leave in extension of Furlough.

The 29th July 1869.

Under instructions from Her Majesty's Secretary of State for India, it is hereby notified that an Officer who obtains in England leave on sick certificate, in extension of leave on private affairs under Clause XI of G. G. O. No. 1066,* of the 10th November 1868, will be considered as having been on sick certificate for the whole period of his absence.—(G. O. G. G. No. 799 of 1869.)

* Madras G. O. 1st December 1869, No. 433.

Dress—Medical Subordinates.

The Right Hon'ble the Governor General in Council is pleased to direct that the following dress shall be worn by the Subordinate Medical Department in India :—

Apothecaries and Assistant Apothecaries.

Winter Uniform—Coat—patrol jacket of dark blue cloth, same shape as worn by Officers of the British army, quite plain, and with red stand-up collar and cuffs, hooked at the neck, and with 6 small gilt buttons down the breast at equal distances.

For Apothecaries, a narrow double gold cord round the collar.

For Assistant Apothecaries, a narrow single gold cord round the collar.

Buttons—gilt, with the crown and letters V. R., with the words "Bengal (Madras or Bombay) Subordinate Medical Department" within a star raised thereon.

Summer Uniform—Coat—plain white tunic (American drill), with stand-up collar, 6 small gilt buttons at equal distances down the front.

Trousers—Oxford-mixture cloth with a silver cord down the outward seam, or white linen, according to the season.

Forage Cap—blue cloth forage cap with black silk oak leaf band, and "Bengal (Madras or Bombay) S. M. D." embroidered in gold in front, and patent leather peak.

Helmet—grey felt, with plain white pugree.

Boots—ankle.

Gloves—white.

Sword, Scabbard and Belt—same as issued to Warrant Officers of the Ordnance and Commissariat Departments.

Jacket—plain blue cloth, with red facings, lined with black silk, silver-plated cord shoulder straps, 10 small gilt buttons down the breast at equal distances.

Waistcoat—white Kerseymere, one row of 8 small gilt buttons at equal distances down the front, or white linen, according to the season.

Hospital Apprentices.

Winter Uniform—Jacket—blue cloth, raggy, with scarlet facings, 8 plated buttons with the device "Bengal (Madras or Bombay) S. M. D." on them down the breast at equal distances.

Summer Uniform—Coat—plain white tunic (American drill), with stand-up collar, 6 plated buttons at equal distances down the front.

Waistcoat—white Kerseymere, one row of 8 small plated buttons down the front at equal distances, or white linen, according to the season.

Boots—ankle.

Gloves—white.

Forage Cap—plain blue cloth, with black oak leaf band, and patent leather peak.

Trousers—Oxford mixture cloth, or white linen, according to season.

Helmet—grey felt, with plain white pugree.—(G. O. G. G. No. 801 of 1869.)

Inspectors or Deputy Inspectors General of Hospitals—Pensions.

With the sanction of Her Majesty's Secretary of State for India, it is hereby notified that an Inspector or Deputy Inspector General of Hospitals, who has completed his tour of service and has reverted to British pay, may reside in England, qualifying at the same time for higher pension.—(G. O. G. G. No. 825 of 1869.)

Widows of Military and Medical Warrant Officers—Pensions.

G. O. G. No. 307 of 21st September 1869.—The following extract from a communication from the Government of India, dated 26th August 1869, No. 704, is published for general information :—

"I am directed to acknowledge the receipt of your letter, No. 1655, dated 3rd May 1869, enquiring whether the widows of Warrant Officers who were pensioned prior to the 1st January 1866, and died after that date, are entitled to the higher rates of pension, and in reply to acquaint you for the information of the Right Hon'ble the Governor in Council, that the widows of these Officers, even though pensioned before the 1st January 1866, may, if their husbands died after that date, be admitted to the new rates of pension laid down in General Order No. 69 of the 22nd January 1868."

2. The above decision is equally applicable to the widows of Warrant Officers of the Medical Department, who will, with reference to G. O. G. No. 618* of 1869, be entitled to the new rates of Pension laid down in para. 27 of G. O. G. G. No. 560† of 5th June 1868.

* Madras G. O. G. 22nd June 1868, No. 228.

† Madras G. O. G. 19th June 1868, No. 232.

Military Officers and Chaplains—Hill Stations—Medical Aid.

The 9th September 1869.

The following letter from the Home Department, to the Government of the Punjab, is published for general information :

I am directed to acknowledge the receipt of your letter No. 1979, dated the 1st ultimo, submitting a question regarding the title of Military Officers and Chaplains visiting a hill sanitarium to gratuitous medical attendance, and requesting an authoritative ruling as to the persons entitled, when residing at such station, to the privilege for themselves and their families.

2. In reply, I am to quote the decision of the Government of India on a former occasion on a similar reference, and to state that the ruling therein laid down holds good whatever the circumstances are under which an officer and his family are resident at a hill station, and further that all Officers and their families, who are entitled to gratuitous attendance in a cantonment or civil station, are entitled to it at any other place where there is a Medical Officer paid by Government for staff or general duties.—(G. O. G. G. No. 945 of 1869.)

* Ecclesiastical Proceedings. June 1864, No. 16. From E. C. Bayley, Esq., Secretary to the Government of India, Home Department, to the Ven'ble J. H. Pratt, Archdeacon of Calcutta, No. 1070, dated Simla, the 30th June 1864.

I am directed to acknowledge the receipt of your letter dated the 10th ultimo, and in reply to refer you to the order of 18th January 1856, republished in paragraph 8 of Resolution dated 29th Sep. 1857, under which the families of Chaplains and Assistant Chaplains, wherever they may be in India, are clearly entitled to be attended gratuitously by the Medical Officers of Government.

(General Orders by the Commander-in-Chief.)

Railways—Travelling at Reduced Rates.

Adjutant General's Office, Head Quarters, Dalhousie, 26th November 1869.

No. 333.

* * * *

Government has been pleased to rule that Officers drawing travelling and mileage allowance are not entitled to receive railway certificates to enable them to travel at reduced rates.

Military Department, No. 467, dated 17th Nov. 1869, to the Quartermaster General.

Medical Department—Attendance on Women in Child-birth.

G. O. C. C. No. 18 of 25th February 1870.—The following General Orders by His Excellency the Commander-in-Chief in India are republished :—

Head Quarters, Calcutta, 21st December 1869.

No. 365.

The Commander-in-Chief has been pleased to decide that the rule contained in the foot note at page 108 of the Queen's Regulations, quoted in the margin, does not apply to India, and that a Regimental Medical Officer cannot refuse to attend the wife of an Officer or soldier in Child-birth, whatever other professional aid may be available at the station.

"But attendance cannot be claimed for women in child-birth in the case either of the wife of an Officer or of any one entitled to Medical aid, unless the assistance of a mid-wife or medical practitioner cannot possibly be procured."

Veterinary Department.

Adjutant General's Office, Head Quarters, Calcutta, 24th January 1870.

No. 18.

The following procedure will be observed in future on occasions when Inspecting Veterinary Surgeons visit regiments of Cavalry, or batteries of Artillery, for the purpose of veterinary inspection :—

G. O. 248 and 299 of 1866. (Madras G. O. G. 18th Dec. 1866, page 226.)

The Inspecting Veterinary Surgeon on arrival at a station will wait officially on the Brigadier General or other Officer Commanding, in order that the day and hour for his inspection may be published in station orders.

The Veterinary Surgeon in charge of the horses of the corps concerned will accompany the Inspecting Veterinary Surgeon during his inspection. Officers in command of troops and batteries will invariably be present on these occasions.

As a general rule, Commanding Officers of regiments or batteries should be present when the inspection is being carried out, in order that the enquiries and observations of the Inspecting Veterinary Surgeon may be carefully noted ; and the Commander-in-Chief in

India would beg to impress on them the importance of the responsible duty which, under the orders of Government, devolves upon Inspecting Veterinary Surgeons, and the good results which must accrue from harmonious action between themselves and those Officers. When the presence of the Commanding Officer himself is inconvenient or impossible, he should order the Second in Command to take his place.

Inspecting Veterinary Surgeons must take the utmost care to afford to Commanding Officers every information which may be useful in improving the health or condition of the horses ; and they should invariably, without hesitation, point out any defects which they may observe in the stable management, and mention the steps it would seem desirable to take to remedy them.

Before leaving, Inspecting Veterinary Surgeons will forward to the Officer commanding the station a short precis of the result of their inspection, being careful to note in all unfavorable remarks, if any, which they feel compelled to enter in their official report.

Officers—Passages—Overland Troop-Ships.

G. O. C. C. No. 21 of 16th March 1870.—With reference to G. G. O. No. 1109* of 1869, the Commander-in-Chief is pleased to notify that all Officers who may be directed to proceed at the public expense in one of Her Majesty's Overland Troop-Ships are entitled to free passage by sea, between Bombay and Beypore or other port on the Western Coast, when this route is necessarily adopted in travelling to or from their stations.

* Madras G. O. G. 23rd November and 7th December 1869, pages 280 and 287.

CORRESPONDENCE.

The Johnstone Medal.

To The Editor of the Madras Medical Journal.

Sir,—Your correspondent "Medicus" has misled your readers in regard to the award of the Johnstone Gold Medal at the Madras Medical College. In his letter which appeared in the last number of the *Medical Journal*, he asks, "Why the medal is held out to both Departments and given only to one?" and positively asserts that nobody could call to recollection a year in which it was given to a Senior Department student. Facts bearing upon the

matter are as follows: but before stating these, I must mention that the terms of the Committee of the Johnstone Testimonial Fund are "that the medal be presented to the most deserving student, to be selected from the class of those either military or private completing their studies, and that the medal be not, as a matter of course, awarded annually, unless there has been sufficient merit displayed by the individual, and conduct throughout the previous sessions that has met with the approbation of the College Council." From 1849 (the year in which the College Council were in a position to award the medal) to 1851, no Senior Department student completed his studies, and the medal was given to 2nd Department students, who had held the highest position in their classes. In 1852, three Senior Department students passed the College—the position of neither of these was such as to entitle him to the medal—a 2nd Department student obtained it. In 1853 it was given to a Senior Department student on the completion of his curriculum. This student passed a very creditable examination for the Diploma of the College. In 1854 and 1855, no Senior Department student was in his 5th or final year; the medal in these years was given to deserving 2nd Department students. In 1856 and 1857 no medal was given, as no student merited it. In 1858 a Senior Department student completed his course of study, and considering the position he held in his classes during the five years of his attendance at the Institution, the medal would have been, in all probability, adjudged to him, but he unfortunately failed to pass his examination for the Diploma of the College, and was remanded. The medal this year was given to a 2nd Department student of high standing. In 1859 the remanded Senior Department student left College. In 1860, one student of the Senior Department passed out of College. This student's position in the several classes was inferior to that held by some 2nd Department students. No medal was awarded this year. From 1861 to 1863 no Senior Department student finished his curriculum, and no medals were given except in 1863 to a 2nd Department student, who stood at the top of his classes. In 1864 a private student of the Senior Department left College: the Principal announces this year that "no special merit has been exhibited to warrant the College in awarding the Johnstone Medal." In 1865, one Senior Department student left College: the medal was not given this year also, on the ground, I suppose, of insufficient merit. In 1866 two students of the same department left the College. My impression is that, this year again, for the same reason, the medal was withheld. The examination passed by these students for the Diploma of the College was inferior to that passed by many 2nd Department students. In 1867, no Senior Department student completed his studies. A 2nd Department student gained the medal. In 1868, two young men of the Senior Depart-

ment left College : the merits of neither of these were equal to those of a 2nd Department student, to whom the medal was given. One Senior Department student ends his College career this year. If the College Council decide upon the adjudgment of a medal, the recipient will, I feel certain, be a 2nd Department student.

It seems strange that, notwithstanding the better training, prior to joining College, the long period they are under instruction at the Institution, and the comparatively few subjects they study during certain years, that Senior Department students are, as a rule, inferior in attainments to not a few 2nd Department students.

From facts I have given, and which any body can verify for himself from the published reports of the College, you will perceive, Sir, that no attempt has ever been made by the College authorities to practice deception on the public. There were terms to be strictly adhered to in the granting of the medal, and this, there can be no question, they have rigidly done. Begging you will give this letter insertion in your next number,

I am, Sir,
Your obedient servant,
R. WILKINS.

TO CORRESPONDENTS.

DR. SHORTT.—*Received with thanks.*

BOOKS, &c. RECEIVED.

Legg's Guide to the Examination of the Urine.
Annual Report of the Civil Dispensaries, 1868-69.
Journal Des Connaissances Médicales, *to 30th May.*
Indian Medical Gazette, *June.*

The Secretary Madras Branch of ROYAL MEDICAL BENEVOLENT FUND SOCIETY OF IRELAND *acknowledges with many thanks receipt of the following Subscriptions for* 1870-71.

C. M. Cullinan, Esq:, Rs. 10 ; Dr. T. Matthew, Rs. 20 ; Dr. H. King, Rs. 20.

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ORIGINAL ESSAYS.

ART. V.—*Two Cases of Disease of the Tunica Vaginalis.*

By Native Surgeon ANTHONY, G. M. M. C., Ramnad.

THE two following cases, which occurred in my practice, are I consider of infrequent occurrence, and I hope therefore their publicity will be interesting to the profession.

1.—*Ossification of the Tunica Vaginalis.*

Ramasawmy Naidoo, Æt. 60, a native of Tanjore, in the service of the Zemindar of Ramnad, placed himself under treatment for an abscess in the left scrotum. He informed me that for several years past, while he was in Tanjore, he was subject to an enlargement of both scrota, of which the right one, about four years previously, became inflamed, and terminated in an abscess which took a year to heal. The left one, which was stationary while the other was suffering, began to increase in size after the recovery of its fellow, until twenty days previously, when it became the seat of inflammation, which terminated similarly in an abscess, and was allowed to burst spontaneously. The sore was about the size of a half-rupee piece, and situated in the middle and anterior part of the scrotum, which was four times as big as its fellow and pyriform in shape. It was as dirty and filthy as could be, having been covered

with a mixture composed of powdered cotton seeds and turmeric, which is frequently resorted to by native physicians and old females to promote a free discharge from newly opened abscesses. There was a thin sanious and most offensive discharge from the sore, and the patient was weak and exhausted in consequence of the highly irritative fever which attended the inflammation, and of the low diet he was put upon by his Hakeems. The part having been thoroughly washed with a decoction of tamarind leaves, I injected a diluted solution of liquor sodæ chlorinatæ, and applied a large poultice over it. He was ordered broth, milk, port-wine; bark and ammonia in the shape of medicine.

Under this treatment, which was steadily persevered in for a week, there was manifest improvement in the strength and appearance of the patient, and considerable diminution in the size of the tumor.

Having then felt a crackling sound in the tumor on pressure, and the patient also having complained of pricking pain at the part when it was handled, coupled with small spicula of bone discovered in the discharge, I suggested to him the advisability of having the opening enlarged, to give free vent to the discharge, which he readily acceded to. I laid open the part freely with a director and bistoury, and found to my agreeable surprise small pieces of bone, lying detached at the bottom, and a thin layer of bone occupying the place of the Tunica Vaginalis along the inner side of the scrotum near the raphé, and extending upwards as far as the external abdominal ring. The testicle was very slightly enlarged, and situated at the upper part of the scrotum, and was quite detached from the bony part.

As the patient was unwilling to have the whole bone removed at once, though he had sufficient ocular demonstration of the existence of it in the part given him, I was obliged to exercise a little patience, and put up with his whims. The only alternative left for me to adopt was to inject a small stream of water daily, with a urethra syringe, between the bone and the scrotum and detach bit after bit gradually and with difficulty. This tedious process extended over nearly a period of two months, when the whole bone was removed piece-meal, and the scrotum was completely diminished in size. He was discharged cured.

2.—Hydrocele of the Tunica Vaginalis in the Inguinal Canal.

Murugun, Æt. 26, Pallar, who sought my advice for a tumor in his right groin, gave me the following account of his case, viz., that ever since his boyhood he was not able to feel the right testicle in the scrotum, but that he observed a small tumor in the groin, whose increase in size kept pace with that of the left testicle, until after the period of puberty; since when, the swelling commenced to grow larger gradually, till it attained the size of a large mango.

On examination, the tumor was situated in the right inguinal canal, and was smooth, soft, elastic, and elliptical in shape, its long axis corresponding with that of the canal. The right scrotum was small compared with its fellow, and the testicle could not be felt in it. There was a distinct fluctuation in the tumor, it could not be pushed up into the abdomen, and there was no impulse communicated to it on coughing. It was not painful, except in a small circumscribed spot at its upper and middle part, where there was a small hard lump, which was tender to the touch. It was evidently the right testicle, which appeared to have been arrested in its descent from the abdomen in intra-uterine life.

Being perfectly satisfied in my mind that it was a clear case of Hydrocele of the Tunica Vaginalis, I explained to him that there was no other method of curing him completely, than by tapping and injecting the part with compound tincture of iodine. The patient, who had experienced considerable inconvenience from its position and size, in the exercise of his ordinary avocation, which was that of a ryot, and in which he would often be required to work in a state of seminudity, readily consented to submit to the first part of the operation as a tentative measure, and as for the second part, he wished to have it reserved for some future occasion. I performed the operation of tapping, and extracted six ounces of thin, clear serous fluid.

Within three weeks after this operation, the fluid began to collect again, when he was tapped for the second time; and as his objection to injection remained unaltered, I tried another dodge, which was that of introducing red precipitate by means of a probe which was previously oiled and coated with it. As I had tried this plan successfully in some

cases on former occasions, I gave it a trial in this case also; but the result was unfavourable.

It is nearly two years and a half since the case was operated upon, and as the man was living within a few miles distance from Ramnad, I was able to send for him a few days back, when I discovered that it is much larger than it was before. He has promised to come to me after the harvest is over, to be tapped and have the part injected with Tr. Iod. co.

He was married twice within the last ten years, and both of his wives are alive, and have no issue. The second of them, who was married about two years since, was pregnant, and had a miscarriage in her seventh month. She conceived twice after that, and had an abortion in the fourth month on both occasions. He and his wives are perfectly healthy and strong. He positively assured me, that he never suffered from any venereal complaint.

ART. VI.—*On the Amounts of Chlorine in the Atmosphere.*

By J. BROUGHTON, B. Sc. Lond. F. C. S.

AMONG the constituents of atmospheric air that are present in minute amount, common salt is not the least important and interesting. Its amount is rendered evident by the variable proportions in which it occurs in mountain streams near their source and in the rain water falling in the various localities. The source of this salt is doubtless to be mainly ascribed to the evaporation of the finely divided spray of the sea.

The following determinations were made for comparison with similar ones made in England and on the continent of Europe.

The purest waters found in England are found to contain at least 0·5 part of chlorine in 100·000 parts of water. Thus Hawswater in Cumberland contains 0·57. The Bala Lake in Wales contains 0·73 and similar amounts are found in the purest English water which have only been in contact with granite or gneiss rock. This comparatively large amount is what might be expected from an island in the Atlantic surrounded on all sides by the supply of atmospheric salt.

On the continent of Europe, far from the sea shore, a greatly diminished amount of salt is found in uncontaminated waters. Thus the Lake of Zurich contains 0·17 only and the Lake of Zug 0·27 in 100·000 parts. The water from a Swiss alpine stream near its source contained only 0·16.

Having been requested to determine the amounts of chlorine in the streams of a mountain region of India, I in January last collected the water from a stream flowing from the summit of Dodabetta on the Neilgherries, and near its source. From an investigation conducted with five litres of water, I found that this stream contained but 0·059 of chlorine in 100·000 parts. The rain supplying the stream at the time of the year it was collected would be mainly that of the N. E. monsoon. Though a certain amount of evaporation would have occurred since its fall, it may fairly be concluded that the atmosphere through which that rain fell did not contain more than one-tenth of the amount of salt present in English air.

As Ootacamund has two prevailing winds from the N. E. and S. W., I was curious to ascertain the amounts of chlorine in the rain water from the two directions.

On May 27th I collected rain water from a strong shower coming from the N. E. It would have traversed 600 or 700 miles of land. I found that it contained 0·0316 parts of chlorine in 100·000 parts. This rain water contained much organic matter, becoming strongly colored when evaporated to a small bulk. I regret that inability to procure more water before the setting in of the S. W. monsoon prevented me determining the amounts of carbon and nitrogen present.

On June 16th I collected water from the rains of the S. W. monsoon. This would have come across the Indian Ocean about 100 miles distant, and came in a storm of continuous rain. I found it contained 0·050 parts in 100·000 parts. Hence in spite of 120 miles of driving rain, the atmosphere arriving at the Neilgherries contained more salt than, when arriving from the N. E. This rain water moreover, contained practically *no* organic matter and was almost pure water.

The clearness of the air during the "breaks" in the monsoon, so different to what is the case at the latter end of the dry season, is a matter of common remark. From the foregoing it appears highly probable that this is connected with the absence of organic matter.

ART. VII.—*Annual Report of Dispensary attached to Lying-in Hospital, for the year* 1869. By Prof. W. H. HARRIS, M.D., Superintendent of the Hospital.

(Communicated by the Inspector General Indian Medical Department.)

		1867.	1868.	1869.	Increase.	Decrease
In-Patients.	Europeans & East Indians.	93	122	138	16	...
	Natives.... ...	52	112	113	1	...
Out-Patients.	Europeans & East Indians	4,228	3,776	2,918	...	858
	Natives,... ...	6,369	4,739	4,615	...	124

The Annual Tabular Statements exhibit the number of in and out patients in the Dispensary attached to the Lying-in Hospital for the year 1869. There is a slight increase in the number of in-patients, but a considerable falling off is shown in the number of admissions of out-patients which is owing chiefly to the operation, for the whole year, of the mode of entering admissions, since Mr. Apothecary Boon joined the Institution, as indicated in the Report for 1868. The average daily attendance (45) of out-patients continues the same as it was in that year, which shows that the actual work has not at all decreased. Fifteen deaths occurred during the year, including two patients who were removed by their relatives in a precarious state; eight were Europeans and East Indians, and seven Natives. Seven of these were infants, the cause of death in five being infantile convulsions, and in the other two, erysipelas. Of the remaining eight, one died from cholera, one from thrombosis, one from febris intermittens (alcoholism), one from valvular disease of the heart, one from dysentery, one from pelvic hæmatocele, one from ascites, and one from peritonitis supposed to have been caused by criminal abortion. Many of the other cases treated possess considerable interest, but it would extend the report too much to refer to more than two or three of them in detail.

One case, a native, submitted to ovariotomy and recovered, the operation was performed on the 30th December, and will more properly appear in the report for this year (1870.)*

* Published in No. 3 of this Journal, page 247.

The following case of extensive epithelial cancer of the cervix uteri which was successfully amputated is worthy of record.

Hannah, Æt. 42, was admitted on 13th November, complaining of metrorrhagia for six weeks continuously, always regular before, complains of no pain, and states that she had no leucorrhœa before the bleeding commenced. Is a stout, well nourished and healthy looking woman, and on examination, a large tumour, the size of an orange, was found occupying the vagina and involving the os and cervix uteri. On passing the finger around the base, the mass is found to proceed from the cervical canal, the lips of the os being everted and terminating in a distinct outline at its edge. It bleeds freely on the slightest touch, is granular, and has the irregular form and shape of a cauliflower excrescence. Injection with Sol. Ferri was ordered to control the hæmorrhage, and on the 15th, the woman having been prepared for operation by a purgative and emollient enema, I proceeded with Dr. Cornish's assistance, to remove the diseased portion of the cervix. A large sized wire rope, composed of about 15 to 20 strands, was passed high up around the base of the mass after seizing it, and dragging down with strong vulsellum forceps towards the outlet, but in consequence of infiltration of the tissues on the left side, and the granular friable composition of the tumour, it would not descend. The rope was very gradually tightened with Hicks' écraseur, and after about an hour gave way. It was re-adjusted and again broke at the point where it was fastened to the moveable slide. Sim's Porte-chain (Chasaignacs) écraseur was then substituted after adjustment of the chain in the groove made by the rope, but before much progress had been made, the rack-work gave way, and it was then attempted to remove the mass by Aveling's polyptrite in separate portions after splitting up the cervix with scissors. The bar of this instrument unfortunately broke, and the whole cervix was then amputated by scissors. Bleeding was free but not very considerable, and on examination it was found that a portion of the disease was still remaining on the left, where the wire and chain could not be made to surround it from implication of the vaginal wall. As much as possible was removed by scissors, and the actual cautery was then applied to the remainder as well as to the bleeding points to control hæmorrhage. The patient was very sick from the effects of chloroform, and during the operation

became so restless as to interfere with its progress until a hypodermic injection of morphia was given, which kept her almost perfectly quiet until the operation had been completed; under the combined influence of the chloroform and morphia she did not seem to feel either the scissors or the cautery.

17*th.*—Vomiting occurred during the day yesterday, and was controlled by an effervescing mixture with Tinct. Opii. This morning has extreme tenderness all over the abdomen, with some distension and high fever.

Subcutaneous injection of Morphia gr. $\frac{1}{8}$. Cataplasma lini.

Opium gr. i. om. horâ.

Vespere.—Still much tenderness and fever.

Cont. Opium om. horâ. Tinct. Aconiti ♏ ii. 2dâ q. h.

18*th.*—Took 15 grains of opium since yesterday morning. Pulse 98, tenderness much less and fever abated.

Cont. Opium gr. i. and Tinct. Aconiti ♏ ii. 2dâ q. h.

Cont. Cataplasma.

19*th.*—Pulse 96. Had 10 grs. of opium since yesterday. Hardly any tenderness, no fever.

Omit Tinct. Aconiti.

Opium gr. i. bis. Cont. Cataplasma. Carbolic syringing.

20*th.*—Bowels not relieved. Enema Emol. Cont. Opium.

25*th.*—Examined parts which are found to be a mass of black slough around cervix.

30*th.*—Omit opium, slough gone, parts granulating.

December 3*rd.*—Going on well, parts granulating, no pain or hæmorrhage. Discharged as out-patient.

11*th.*—Ulcer not larger than half a rupee, and granulations small and healthy. No os can be seen. Uterus adherent to left side of pelvis, infiltration ?

30*th.*—Ulcer healed, and cervix reduced to size of a four anna piece. A month later, no reappearance of the disease.*

Retro-uterine Hœmatocele following an abortion of the 5th month. Rupture into Rectum. Recovery.

Lutchmoo, Æt. 30, married 14 years, the mother of five children, was admitted on the 27th May, complaining of severe pain and swelling of the abdomen. There is consider-

* This patient returned to Hospital in July with Metrorrhagia and fetid discharge, and on examination a corroding ulcer was found in the cervical canal which admitted a finger, and the cavity was also involved in the disease.

able constitutional disturbance, tenderness on pressure over hypogastrium, abdomen very hard to the touch, indistinctly fluctuating, and the enlargement extends to the umbilicus. Per vaginam, the toucher discovers the cervix pushed forward close to the symphysis pubes by an elastic swelling in Douglas' space, which slightly fluctuates on jerking and tapping the abdominal swelling. It is somewhat tender, and is half the size of a fœtal head; a distinct groove is felt between it and cervix uteri. On inspection, the cervix is almost natural in size and appearance, a sound passes 3½ inches and produces much pain. States that she aborted at the fourth or fifth month of pregnancy eight days since; and that the discharge ceased three days afterwards suddenly, when the swelling and pain immediately commenced. The fever came on shortly afterwards. Had vomiting all through pregnancy, but it became increased after the swelling of the abdomen had taken place.

℞ Opii. gr. i. om. horâ.
Large linseed poultice over abdomen.
Tepid injection of vagina.

29*th.*—Pain relieved, still very hot, swelling not diminished.

Cont. Opium om. sec. horâ.

30*th.*—Vomiting much complained of, still hot and tender. Pulse 84.

Mist. Effervescens. Cont. Opium.

31*st.*—Still much tenderness, swelling somewhat increased a little above umbilicus, vomiting the same.

Calomel gr. i., Opium. gr. ss. om. sec. horâ.
Cont. Poultice.

June 2*nd.*—Tenderness much decreased, but surface still hot, and swelling remains; it is harder to the touch in the flanks, and more fluctuating in the centre. On toucher the tumour behind cervix is more prominent and semifluctuant. On inserting exploring trocar, a little thick treacly blood issues from the canula, proving, as was suspected, the presence of a Hæmatocele.

Omit Calomel, cont. Opium and Poultice.

3*rd.*—Swelling of abdomen evidently increasing, and in centre fluctuation more distinct. Bleeding must therefore still be going on. Vomiting continues unabated.

℞ Plumbi Acetatis gr. ii., Tinct. Opii. ♏ x.
Acid. Hydrocy. dil. ♏ ii. every fourth hour.

5th.—Yesterday the bowels were frequently moved during the afternoon, and a large quantity of semifluid blood voided per anum. Swelling considerably diminished, but the harder part of the tumour is more defined in the flanks, per vaginum, the retro-uterine tumour is also less, and is likewise hard at the sides, while in centre there is a cup-shaped depression where, before, it was most prominent. An evacuation during visit consisted almost wholly of slightly altered fluid blood, rather dark in color. No vomiting to-day.

Omit Mist. Opium gr. 1 om. 3 tiâ horâ.

7th.—Still discharging some blood in the stools, tumour much reduced in size, but the periphery of it by the iliacs is harder and more defined.

9th.—Stools natural, no blood since yesterday.

15th.—Enlargement of abdomen gradually diminishing.

19th.—On vaginal examination, remains of tumour, behind the cervix in Douglas' space, still perceptible to the touch. Has quite regained her health, and wishes to attend as an out-patient. Discharged.

Retro-uterine Hæmatocele. Puncture per vaginam. Rectovaginal Fistula. Death from rupture of hepatic abscess into peritoneum.

Kamachee, Æt. 31, married 17 years, the mother of four children, youngest being three years old, was admitted on the 5th September complaining of pain in hypogastrium, with some local swelling and constitutional fever.

History.—The pain began four days before admission was chiefly confined to right iliac, and was unattended with vaginal discharge. A month ago she came to hospital suffering from a similar pain, she had not menstruated then for three months, and she believed she was pregnant. It was ascertained on examination that pregnancy was non-existent, but that an enlargement from pelvic tumour, the nature of which was not then determined, was the cause of her trouble; and the pain being relieved, she was directed to attend in a month. There was a slight colored discharge from the vagina at that time.

This tumour is now found to occupy Douglas' space, displacing the uterus forward close to the symphysis pubes, and to be round and semifluctuant. There is also a swelling in the right iliac continuous with the retro-uterine tumour, and on inserting a fine exploring trocar, to clear up any

doubt as to its nature, little fluid blood flowed out through the canula, proving, as was suspected, that it is a Retro-uterine Hæmatocele.

Fomentations and opiates with tepid syringing were ordered at first, but the abdominal enlargement steadily increasing daily from effusion of blood into the peritoneum, which acetate of lead and other hæmostatics failed to arrest, ice was applied over the abdomen with good effect. On the 14th September there was a little colored discharge per vaginam from the point where the exploring trocar had been inserted, somewhat offensive, and of a dirty brown color. The opening was enlarged, and a large quantity of similar fluid evacuated, and the emptying of the cyst was promoted by a light binder and carbolic syringing.

The opening closed in a few days, and the abdominal enlargement returned, and was attended with considerable constitutional disturbance necessitating a fresh opening, which was made on the 27th September. A large quantity of brownish black grumous fetid fluid was let out with almost immediate relief to the constitutional symptoms, and the cyst was syringed daily with carbolic lotion; for two or three days the discharge continued of the same character, it then became mixed with fæculence, and afterwards was more scanty, but almost entirely fæculent in character, which showed the existence of a communication between the bowel and the cyst. The patient was supported with nourishment, stimulants and tonics, and the cyst was continually cleared out by injecting carbolic acid and water, 1 to 40, by a double channelled canula and syringe.

By the middle of October, the abdominal tumour had nearly disappeared, and the discharge had almost ceased; the woman was improving in health, and seemed likely to make a good recovery. A day or two later it is noted that the discharge became dark again, mixed with fæculence and very offensive; on the 20th, she was again improving, and discharge less; but on 21st was attacked suddenly with severe pain in the abdomen, with tenderness and tympany, and symptoms of collapse soon followed. Stimulants were freely administered with opium, and she rallied; on the 22nd had another sharp paroxysm of pain, and she sunk and died on the 24th.

Autopsy.—On reflecting the abdominal parieties, the omentum and some of the small intestines are found of a

deep red color but not inflamed, there are neither fluid nor adhesions in front, but the uterus is firmly bound at the fundus to the neighbouring intestines. On elevating the intestines on the right side, in order to remove the pelvic viscera en masse, extensive adhesions are found to exist between them and the under surface of the liver, and on separating these, a quantity of serum oozed out from between them, and a large abscess, projecting from the under surface, is found to have ruptured and emptied a portion of its contents into the peritoneum at that point. The inflammation and symptoms of perforation during life are thus accounted for, though the cause was unsuspected.

The rectum and other pelvic viscera being removed en masse, a large cyst, containing a grumous putrilage, is found behind the uterus, communicating with vagina by an opening behind cervix uteri, and bounded above by adhesions between the fundus uteri and intestines, behind by rectum, below by upper and posterior wall of vagina, and laterally by the reflection of peritoneum over the walls of the pelvis. It thus occupied the intra peritoneal pouch, known as Douglas' space. The preparation was sent to the Medical College Museum. The origin of the hæmorrhage could not be traced from the lapse of time since it occurred.

The Matron, Mrs. Secluna, continues to merit the highest praise as a trustworthy, zealous and thoroughly efficient public servant, in the discharge of the duties devolving upon her office. The usual Annual Report having already been made regarding the conduct of the Apothecary and Hospital Assistant, a reference to it, though usual, is hardly called for here.

The daily cost of dieting each European and East Indian patient, including share of wines and spirits, has been Rupees 0-9-6.

The recoveries from the same class of patients, as hospital stoppages during the year, amount to Rs. 482-1.

Native patients received per diem an allowance of 2 annas, in lieu of diet, as in the lying-in department.

Art. VIII.—*Cases of Snake Bite continued.* By J. Shortt, M.D., &c., Surgeon, Superintendent General of Vaccination, Madras Presidency.

The following cases of snake-bite have been received since my last contribution, through the kindness of Dr. McKenzie, C.B., C.S.I., &c., Inspector General of the Indian Medical Department, Madras.

Civil Assistant Surgeon J. Barter reports from Seeonee the following two cases :—

Case 1.—Poosoo, Gond by caste, labourer, male, aged 6, was bit on the right hand by a cobra (N. Tripudians) on the 16th May 1870, at 12 A. M., in the village of Badulpore ; he was insensible, and died at 3 P. M. on the same day, having been ill three hours. No treatment was carried out.

Case 2.—Moosummah Kauchee, Æt. 50, a Gond female cultivator, was bitten on the left leg by a cobra (N. Tripudians) on the 4th May, at 8 P. M., in the village of Baleewara. She died the same day insensible at 9 P. M., and was ill for only one hour. No treatment was put into practice.

Civil Assistant Surgeon A. Porter, M.D., Akola, reports the following case :—

Case 3.—Yelloo, Ghorewalla, aged 25, married, and of temperate habits, was bitten by a snake at 2 A. M. of the 7th of August 1868, and had had some ammonia applied to the part immediately afterwards. I first saw him at 8 A. M. There was one punctured wound surrounded with some effusion of blood near the centre of the left palm. The hand, especially on the dorsal surface, was very considerably swollen.

Though a muscular little man, he was so prostrated as to be unable to sit up or even to articulate distinctly. He was very restless, and had great dyspnœa ; respiration 40 in a minute, greatly laboured and accompanied by loud mucous râles, and a flow into the mouth of frothy mucus tinged with blood, which he expectorated with great difficulty. Pulse 120, and very weak. A mustard emetic was given to clear out the air passages. This he had some difficulty in swallowing. He vomited a large quantity of frothy bloody mucus, but before ammonia or brandy had been pro-

cured (a matter of five minutes time or so), he died from apnœa. A post mortem was not permitted. No one saw the snake that caused this man's death, but it was supposed by the family of the deceased to have been a cobra.

The following case is related by Surgeon Clarence Cooper, M. D., F. R. C. S., 5th Regt. N. I., Secunderabad.

CASE 4.—I have the honor to append, as far as my memory serves me, the particulars of a case of snake-bite which occurred about March or April 1860. I was then living in the Poonamallee Road, Madras, almost opposite to St Andrew's Church. I had gone to attend the service there at 11 A. M. on a Sunday morning, and on coming out of church, was met at the door by a servant, who told me that about half an hour previously the cook's son, a lad about 12 years of age, had been bitten by a cobra on the thumb. He had seen something moving in a hollow tree, and had thrust his hand into a hole. A ligature had been applied round the thumb, and another round the arm. His whole hand and arm and the face were swollen, the lips livid, the surface of the body cold, and no pulse perceptible at the wrist. On auscultation, the heart was found to be beating very slowly, respiration being slow in proportion. He was insensible, could not swallow, and was not roused by inhalation of ammonia. The exhibition of some stimulants at once seemed to be required, and as he could not swallow, I immediately injected from 6 to 8 ounces of whisky per rectum, that having been the first stimulant at hand. The wound in the thumb was incised freely and fomented with warm water, and hot bottles were applied to the feet and axillæ, and frictions to the surface generally. In a very few minutes after the injection had been administered, the lad became semi-conscious, the pulse rose, and he became able to swallow. Half a drachm of liquor ammoniæ was given in water. Ammonia, brandy and water continued to be given at intervals, but the boy did not become much affected by the stimulants; there was no violent reaction, but by 5 P. M. he appeared to be quite well again, except for the wound in the hand, and was walking about the compound. At 5 P. M. a cobra was killed in the tree in which the boy had been bitten.

Dr. Peterkin, Garrison Surgeon Trichinopoly, relates the following case:—

CASE 5.—Matheraymoothoo, Æt. 28, prisoner, sentenced

to four years and four months, was on the 27th September 1869, bitten on the back of right hand by a small snake resembling in appearance a young rock snake, about nine inches long, said to be called "*Cuttoo vereeyen*" in *Tamil*: was not faint. Nitric acid was applied by Dresser, and a ligature at wrist. There is now a good deal of solid swelling of hand and forearm, but not much pain; ordinary diet, sling, cold lotion.

30*th*.—Pain all gone, very little swelling remaining. *Discharged* to light work. The snake which is said to have bitten this man is said by Dr. Shortt to be a small *Daboia elegans*.

Note.—I remember seeing this snake through the kindness of Dr. Peterkin. I could not examine it as it was preserved in a small bottle with spirits at the time, and from the markings I pronounced it a young *Daboia elegans*, although it struck me then, and I am now convinced that it was a *Carina Echis*, and not a *Daboia elegans*.

Surgeon W. H. Morgan, 23rd Regt. L. I., reports the following cases.

CASE 6.—At Banda, on the 13th September 1859, about 1 P. M., a grass cutter was bit between the ring and little fingers of the left hand by a *Bungarus Cœruleus* (*Krait, Hind.*) Treatment consisted of ligature, suction by patient himself, cauterization by nitrate of silver and stimulants. Result, *death* between 3 and 4 P. M. of the same day.

CASE 7.—A horsekeeper was bitten on the dorsum of foot about 7 and 8 P. M. at Trichinopoly; the reptile is said to have coiled round the ancle. The snake was not identified as it was not seen; the date of accident not recorded. Treatment consisted of ligature, snake stone applied to extract poison, stimulants. Recovered.

CASE 8.—Naigue Venkatacellum, No. 109, of the 23rd Regt. L. I., was bitten on the dorsum of the big toe, at Quilon, on the 10th May 1869, a little before 2 P. M. Scientific name of snake not known, the *Malayalim* name is "*Annallee*." Treatment consisted of ligature, scarification of foot, subsequent cauterization by nitrate of silver. ℥ xx doses of aromatic spirits of ammonia every half hour. Patient had been chewing some leaves before admission, and had moreover seized the snake and bitten it about the abdomen in which a dead rat was found. Recovered.

Dr. Thompson, Officiating Zillah Surgeon, Tinnevelly, reports the following case.

Case 9.—I have the honor to state that I treated one case of snake bite which occurred in the jail in October last. The patient was a convict. He was bitten at about 1 o'clock in the morning of the 17th October 1869, when asleep, and as the pain by which he was disturbed was not severe, he soon fell asleep again. In about an hour after, he was disturbed by a feeling of suffocation when he called for assistance. From that time to 6 A. M. he was treated with stimulants composed of brandy and ammonia mixed with Condy's Fluid, which appeared to rouse him for a time, but he soon got low again, and died at 6 A. M. Although a very careful examination was made, no cause could be detected to account for death. All the organs were perfectly healthy, but the blood in all parts of the body was quite fluid. No mark of a bite could be seen at the part where he was said to be bitten, although a good lens was employed. That it was a snake bite there appears to be no doubt from the patient's statements, from the symptoms, and from the fact that a snake of the black Viper kind was found in the shed not far from where he was sleeping.

Surgeon W. Fry, Residency Surgeon, Travancore, states as follows :—

Case 10.—I can only distinctly recollect two cases of snake bite within the last ten years. One was a boy who was bitten by a cobra in Quilon in 1860. He died five hours after receiving the bite, and I only saw him a few minutes before death, when it was too late to do anything, but to administer stimulants. The second case was

Case 11.—A servant of an officer at Vellore, in 1863, who was bitten by a snake one evening walking to the Mess House. I freely scarified the wound after applying a ligature, and administered large doses of ammonia and brandy. The foot in this case was only slightly swollen, and the man recovered without any serious symptoms. As I did not see the snake, I am not aware if it was a poisonous one or not. These are the only cases I can distinctly remember, but I think several cases were admitted into the Civil Dispensary, Vellore, when I was in charge of it; and if so they would be found recorded in the journals of that Hospital.

Dr. Mootoosawmy, Native Surgeon, Manargoody, reports:—I have the honor to state that 23 cases of snake-bite have been recorded during the last nine years, from 1861 to 1869, and there have been no admissions either prior to, or subsequent to, that period. Of these 22 were out-door applicants, and one was an in-patient. These severally did well and none proved fatal. The treatment adopted in these cases has been the ligature of the part above the bitten spot, and cauterizing it with Liq. Ammoniæ or Nitric Acid ; 5 to 10 drops of Liq. Ammoniæ in an ounce of water administered every hour or every half hour to the extent of five or six doses, until vomiting is produced, which I found a very favourable symptom, and this was followed next day with a purgative. These have been found effectual in curing the snake-bite cases that have presented themselves in my practice. From the small number of cases of snake-bite stated above, it will be seen that such cases are not common in this station, and moreover the Municipality have given rewards since March 1869 for killing venomous serpents; which have no doubt had a good effect, as 280 of the venomous dangerous reptiles have been destroyed up to date. At Melunthum, a village 9 miles south of this town, where the Wesleyan Missionaries located here have a congregation, many cases of snake bite have occurred during the corresponding period, and some cases have been known to be fatal. A small quantity of Liquor Ammoniæ was entrusted, with instructions, to the Catechist stationed there, who has reported from time to time the beneficial effects of the diffusible stimulant, and there can be no doubt that by the timely administration of this remedy several persons have found relief. In conclusion, I beg to state that I have found the use of Liquor Ammoniæ to afford relief in the treatment of snake bite during my practice.

Assistant Apothecary J. G. Ashworth, in Medical charge of Civil Dispensary Combaconum, submits the following:—I beg to state the following two cases of snake bites were treated at the Civil Dispensary here, one in the month of December last, and the other in January of the current year. In both instances the parties were bitten at night, having accidently trampled on the snakes, and from the darkness of the night were unable to give a description of them. The first case was a

CASE 12.—Man of the Chuckler caste, named Pulun, aged about 30 years, applied for treatment between 12 and 1 P. M. on December 1st, stated that he was bitten by a snake in the outer part of right foot about 10 o'clock the previous night. Foot and lower half of leg swollen, two or three small points or excoriations visible at the part said to have been bitten; complained of feeling a dizziness in the head, and a peculiar tingling or burning sensation running upwards to groin. Skin warm and perspiring, pulse somewhat excited; was ordered a purgative of Calomel and Jalap with Liquor Ammoniæ ℥ x. at once, and the latter repeated every hour. The bitten part was scarified and Liquor Ammoniæ freely applied to the wound. At 5 P. M. said he felt no tingling or burning sensation in leg, the dizziness of head had also disappeared, but still complained of pain in foot. Swelling increasing and extending higher up to knee; was feverish. Bowels freely acted upon by purgative. Had taken in all about 5 doses of Liq. Ammoniæ. Ordered Mist. Salina Diaph. ℥ i. every four hours. The application of Liq. Ammoniæ to wound repeated, and a wet bandage applied to foot and leg. December 2nd, said he perspired freely during the night, and that with the exception of a slight pain and the swelling in foot and leg, he felt otherwise quite well. Bowels not moved. Ordered Mist. Salina ℥ i. every four hours, and the wet bandage to be continued. From this date he continued attending the hospital every morning until the swelling of foot and leg entirely subsided. The saline mixture was continued merely to keep the bowels free. He was discharged quite well on the morning of the 8th December.

CASE 13.—The second case was a man named Seenevasen, aged about 31 years, a Policeman, admitted an out-patient January 11th, stated that while on his way to Kabistatum, the previous evening between seven and eight o'clock, accidentally trampled on a snake near a village called Samimullay, and was bitten in second toe of right foot. No marks or points could be observed, neither was there any swelling. Complained only of feeling slight pain at the part, otherwise felt quite well. Ordered a purgative of Calomel and Jalap and Liq. Ammoniæ applied to the part, first slightly scarifying it.

12*th January.*—Bowels freely acted upon by purgative, slept well during the night: still feels a slight pain at the part. The Liq. Ammoniæ was again applied to the part.

13*th.*—Quite well, discharged. The above are the only two two cases that came under my treatment, both as out-patients of the Civil Dispensary. In the first I have no doubt he must have been bitten by some kind of snake not very venomous, but the second case is rather a doubtful one.

Dr. James Ross, Zillah Surgeon, Tanjore, reports the following:—

Case 14.—While visiting the jail on the morning of the 16th September 1866, it was reported to me that a prisoner, one of a gang employed in demolishing the ramparts of the fort here, had been bitten by a cobra on the dorsum of left foot. He had been working only some 40 yards from the jail, and supported between two other prisoners reached it a few minutes after being bitten. Though a stout healthy young fellow, about 24 years of age, he had in a few minutes succumbed in the most alarming way to the combined effects of the poison, and, as was afterwards proved, of terror. He was bathed in cold perspiration and quite unable to stand without support. Pulse quick and feeble, breathing rather hurried and gasping, and in short there was every appearance of a speedy and fatal termination to the case. But hardly had I finished my hasty examination, when the author of all this mischief was brought to me, a slender cobra, about 7 or 8 inches long.

The creature was so slight, so immature and altogether so insignificant looking, that it was impossible to avoid regarding the symptoms as due more to fear than to poison, and the result speedily justified this view. The patient was put to bed, a paste composed of ipecac, olive oil, chloroform, and Liquor Ammoniæ applied to the wound, where a burning pain was complained of. He was assured that he had nothing to fear from the bite of such a small snake, and last but not least, Brandy and Ammonia were given internally pretty freely. In less than two hours the alarming symptoms had all disappeared, and thanks to the brandy, he had grown quite sanguine about his recovery, though at first he looked upon himself as a "dead man." By evening he was himself again, and went to work as usual the next day. The case affords a better illustration I think of what terror and shock can do than of the effects of snake bite. A speck of blood showed the position of the bite.

I HAVE sent all the cases of snake-bite I received, for publication in the *Madras Medical Journal*, many of which are simple cases and were no doubt caused by the bite of harmless snakes; others are vague reports, and general assertions of no value whatever; but I thought it best to publish every case, and in a review to select the grain from the chaff, and as I am in hopes of receiving more cases of snake-bites, I must defer such remarks as I may have to offer, for a future occasion.

For the following case I am indebted to Mr. Henry Browne, a Pleader at Sydapet, who very obligingly sent me notes of it, and I need not say how glad I shall be to receive any authenticated case of snake-bite.

CASE 15.—*Kutta Verian*, or carpet snake, poisonous species, about 14 inches long, and nearly one inch in circumference.

(This case is given in Mr. Browne's own words, and the snake he describes and names in *Tamil* is the *Carina Echis.*)

Patient.—Chellan, aged about 65 years, somewhat feeble, was bitten at about 5-5 P. M. 28th February 1870, on right leg, close to the shin bone, and immediately came up to me with the snake which he killed with a mammotee, and I attended to him at once as follows:—

Ligature three inches above the wound, which was fresh, with a little blood trickling, for some time. I used a thin coir string which was the nearest to hand.

Lunar caustic.—I washed the wound and cauterized it and the parts around with lunar caustic.

Sal Volatile.—30 minims in a little water internally.

Stimulant.—One glass of neat brandy;—all this within the first ten minutes.

Symptoms.—Patient complained of pain between the shoulders and in the chest. Pulse hardly 30 to the minute, and feeble.

Eau de Luce rubbed copiously into the *wound*, as well as into the scarified parts which I effected with a pen-knife *above* and around the wound, and excited the flow of the blood, which was greyish, darkish, and latterly of a natural colour. Parts kept wet with *Eau de Luce* on lint. Another glass of brandy with 30 minims of Sal Volatile.

Symptoms.—Same at 5·30 P.M., but with the third dose of brandy, pulse proved stronger, and the fourth dose of

brandy with 20 minims of Sal Volatile (now 6 P. M.), pulse more regular, and stronger. Pains between the shoulders and in the chest subsided :—throat and tongue unaffected. Patient all the time sitting in a reclining position. At 5-30 P. M. finding the patient disinclined to go to the Civil Dispensary, and fearing to lose time, I sent for the Hospital Assistant with a message that the superstitious old man refuses to go there, but that I should esteem it a favour, if he called over to see him. The Hospital Assistant called over, and on hearing from me what treatment I adopted, said that it was the best under the circumstances, and that the pulse and symptoms were not dangerous.

8 P. M.—Patient free from pain in the chest and between the shoulders ; administered another dose of brandy and 20 minims of *Sal Volatile* and a little rolong conjee. After a further application of *Eau de Luce,* patient was allowed to rest undisturbed.

From the time of the bite, patient was closely watched by me, until 8 P. M., and by two persons all night.

1*st March* 1870, 7 A. M. removed ligature. Complains of headache, pain in the vicinity of ligature, and of hunger. Hunger was directly appeased with a loaf of bread. The rest left to nature, patient walking about, but kept out of rain. At 10-30 A. M. patient complained of nothing but a little pain in the wound. The patient is still in my compound.

Note.—No fever. No sweats, but I think I noticed a slight touch of ague; or it may have been the effect of the poison on the nervous system.

I was somewhat surprised on receiving the following note from a Malially at Yercaud one morning.

YERCAUD, 3*rd May* 1870.

RESPECTED SIR,—Some eight months ago I have been bitten by a snake very severely, and about losing my life, but by immediate aid of Mr. Lesmele, I am kept till this, and to my surprise, I find from the last four months, at every new moon, I feel my eyes smarting, getting dim, my whole body is heavy, head turning, and the place bitten by the snake, swollen. All these I feel only for three or four days, and

after, I am in perfect health, without any sensation. I shall therefore most humbly beg you will give me some cure to relieve me from these complaints.

PONNA GOUNDEN.

This man was bitten by a *Trimcouris Malabaricus*, (Jerd.) a species of green viper rather common on the Shervaroy Hills, where it attains from two to three feet in length. In some experiments conducted by me on dogs at Salem in the presence of Dr. Roberts, who was then Zillah Surgeon of Salem, and the Rev. Mr. Foulkes, the bite produced violent swellings of the part, in the vicinity of the bite, and the dogs were not killed, but the swelling continued for several days. In this case, this man was treated, it would appear, by Mr. Lesmele, who has charge of Messrs. Lecot and Co.'s Coffee Estates, with some native pills. However, I gave him a dose of compound jalap powder, once in every three or four days, and after taking four doses of the jalap, he reported himself as being quite well.

ART. IX.—*Case of Dislocation of the Head of the Radius with Fracture of its Neck.* By Surgeon R. W. COCKERILL, Madras Army, Officiating Surgeon, General Hospital, Madras.

SAWMY, Bandyman, age 20 years. A thin but healthy-looking man, was admitted January 30th, 1870, with his right elbow-joint in the following condition:—The whole arm is considerably swollen for three or four inches above and below the joint, which is almost fixed in a nearly extended position. The radius is quite fixed, and an attempt at rotation produces intense pain. The articular extremities of the humerus and ulna are perfect, and the olecranon is in its normal position. External to and a little below the joint there is a bony prominence surmounted by a cup-shaped depression. The patient states that ten days ago he was thrown out of a cart, and thinks he fell upon his extended hand. Finding that the arm was injured, he went to a potter, who pulled at it but did him no good.

Chloroform was administered, and an attempt made to press back the bony prominence, which was evidently the dislocated head of the radius, but it could not be moved.

Cold lotion to the joint.

February 20*th.*—Swelling less, but still complains of pain in the joint. The movements of flexion and extension are very slight. Forearm fixed midway between pronation and supination.

February 21*st.*—Chloroform having been administered, an incision was made over the bony prominence, which was removed by a pair of forceps. It was found to be the head of the radius, the line of fracture being through the middle of the neck. Some loose pieces of bone were at the same time removed, and the edges of the wound brought together by wire sutures and dressed with lint soaked in carbolic acid oil, and the limb supported on an angular splint.

22*nd.*—Passed a restless night, complains of constant shooting pain in the joint. Is unable to pass urine. Pulse 126 and weak, tongue much furred, bowels confined.

To have a purgative enema.

℞ Spiritus Ætheris Nitrosi. ♏ xx.
Tinct. Hyoscyami, ♏ xx.
Liquoris Potassæ, ♏ x.
Aquæ ℥ i.

to be made into a draught and taken at once.

23*rd.*—Has been constantly feverish. Pulse 140, temperature 99½°. Bowels not moved since the action of the enema. Passes urine freely.

To have ℥ i. of castor oil.

24*th.*—Had a bad night, parts round wound greatly swollen. There is a free discharge of pus, but it is somewhat offensive. Continue carbolic oil, joint to be fomented constantly, to have ℥ ss. of arrack every four hours.

25*th.*—Little or no sleep, notwithstanding he had gr. ½ of morphia hypodermically. Bowels moved twice in the night, joint more swollen and painful, discharge free. Has been almost constantly feverish, skin dry and hot, tongue furred, takes milk diet, and a fair amount of chicken broth, and his arrack.

5 P. M.—Has been restless all day from the severe pain. Pulse 114, temperature 103½°, no change in elbow. Has had several doses of diaphoretic mixture, and the joint is constantly fomented. Repeat the hypodermic injection of morphia.

26*th.*—Slept for about three hours last night, takes nourishment well, but feels squeamish after eating, which he attributes to the hypodermic. Pulse 107, temperature 101½°, respiration 22. Complains of pain in the whole arm, but particularly the joint; discharge from wound free, but offensive. Takes his broth and milk, but is constantly begging for more arrack.

28*th.*—Was feverish and restless all yesterday, and now complains of increased pain a little above the outer condyle, where slight fluctuation can be detected; an incision being made, a small quantity of pus escaped, after which he felt great relief.

March 1*st.*—Joint discharging freely, but very painful. Patient is weaker, and has been slightly delirious. Bowels relaxed.

℞ Ammoniæ Carb., gr. v.
Decoct. Cinchoninæ, ℥ i. *ter die.*
Arrack ℥ i. every four hours.

2*nd.*—Took three grains of opium last night instead of the hypodermic injection of morphia; but was purged four times. Stools scanty and offensive. Eyes sunken, pulse 112, very weak. Wound covered with florid granulations. The elbow is covered constantly with a large poultice and fomented.

Continue medicine and diet; to have as much chicken broth as he will take, and ℥ i. of arrack every three hours.

4*th.*—Yesterday the wound bled freely, and is to-day filled with clot. The joint is much swollen, and there is hardly any discharge. Patient very low and weak; bowels regular, stools almost natural. He takes opium every night.

5*th.*—Much the same. Bowels were moved twice last night, wound discharges blood mixed with pus.

7*th.*—The swollen and painful condition of the joint continues, patient generally has four scanty loose motions in 24 hours, and is very weak and emaciated. He takes his

nourishment and arrack well ; there is now no bleeding, and a free discharge from the wound.

9th.—Bowels natural. Again has the hypodermic injection of ½ a grain of morphia, after which he sleeps fairly; takes no opium. Wound covered with healthy granulations, which discharge freely. Pulse 102.

20th.—Since last report he has improved somewhat in strength, and the elbow is not so painful or so much swollen.

April 9th.—Going on well and gaining strength ; an attempt has been made to move the joint, but the pain was too great for the patient to bear, in his present weak state.

21st.—Tries to move the arm and make use of it, but the upper end of the radius is firmly fixed, the forearm being at a right angle ; the discharge is now less, and the patient able to move about. The wound is dressed with lint soaked in solution of carbolic acid in oil. Appetite good, bowels regular.

Continue Bark and Ammonia, &c.

May 16th.—Wound healed, joint almost fixed. Is just able to carry his fingers to his mouth. Bodily health good.

Discharged.

July 1st.—Patient is now a jutka driver, and uses his arm freely. The above case is, I think, worthy of record principally on account of its rarity, and the doubt that would arise in a surgeon's mind as to what treatment should be adopted. The arm in its extended position was almost useless and it was not likely that time would have improved it. To reduce the dislocation was impossible ; there remained nothing but to remove the head of the bone. This, however, set up so much inflammation, that anchylosis resulted before the patient was strong enough to bear passive motion.

This fracture is rarely mentioned by authors. Sir Astley Cooper, in his treatise on dislocations and fractures near joints, says, "This fracture I have heard mentioned by "surgeons as being of frequent occurrence, but there must "be some mistake, for it is an accident which I have never "seen, and if instances ever present themselves (which I do "not mean to deny) they must be very rare."

Dr. R. W. Smith does not allude to it.

Dr. F. H. Hamilton, who speaks more fully of the fracture than any other author, says, "I have seen no specimen obtained from the cadaver except the doubtful one "contained in Dr. Watt's cabinet, and the specimen owned "by Dr. Mutter of Philadelphia."

Dr. Hamilton adds, "Velpeau has once demonstrated the "existence of this fracture in a dissection, but the fracture "was accompanied by a fracture of the coronoid process. "Bérard obtained possession of a similar specimen. I do "not remember to have seen a notice of any others."

South in Chelius says it is "not an uncommon accident," but he does not say where any specimen of it can be seen. Sir W. Fergusson does not mention it. Mr. Flower, in Holmes' *System of Surgery*, says "The post mortem proof "of such a fracture is however almost entirely wanting."

The specimen is in the Museum of the Madras Medical College.

ART. X.—*On the Treatment of Hepatitis by Chloride of Ammonium.* By EDWARD NICHOLSON, Assistant Surgeon, R. A.

I AM not quite sure whether objections to the views expressed in papers published in this Journal be out of place in it, but if not I should like to offer a few observations on the use of Chloride of Ammonium in hepatitis, so strongly recommended by Dr. Stewart, 21st Fusiliers, in the June number.

Dr. Stewart is not only perfectly satisfied with the results of this medicine, but he goes so far as to suggest that "it is not only a specific in certain hepatic affections, but that its peculiar action being manifested, in any given obscure case, may be considered diagnostic of hepatic disease." There are very few medicines of which this can be said. I used to believe it myself of bichloride of mercury and secondary syphilis *mutatis mutandis*, but my experience in the last two years has been far less favourable to the idea. I had a great opinion of Chloride of Ammonium in hepatitis about three years ago from having met with favourable results in

two or three cases from its use, but my faith in it was rudely shaken by the occurrence of some cases in which I employed the medicine from the very first, and where abscess formed without the slightest apparent control from the medicine. It was in 1868, at Kamptee; about ten successive cases from a single battery (E-20) were admitted with continued fever accompanied by a dusky red spotted eruption over the trunk; this gave place in a couple of days to hepatitis, of very severe character in the first few cases, of decreasing severity in the rest. They were treated by blisters and Chloride of Ammonium (in scruple doses); the first case died within a week of hepatic abscess, the second and third had abscesses which caused their subsequent invaliding home. These abscesses were curious, as in both cases they were tolerably superficial and emptied themselves at intervals of two or three days by the bowel; the swelling would be seen to increase and then, on about the third day, an attack of diarrhœa would relieve the patient of his distressing symptoms and cause the swelling to disappear. The other cases did well; some were treated with Chloride of Ammonium and some without, but they were much milder, and the first appearance of any hepatic tenderness was met with a blister. But I have never used the salt since. Some time ago I was led by accident to the use of a remedy in acute hepatitis that I am sure I never should have thought of. A woman of the Artillery at this station was in hospital with acute hepatitis (which she had also had a couple of months before), blisters were applied, and I gave as usual some harmless alkaline medicine internally as a *placebo*, but she did not improve at all; she was very impatient, and one day I confess she annoyed me so much by Hibernian volubility of complaint at the pain she felt, that I ordered her thirty minims of Tr. Opii, to be repeated every four hours until she slept. She immediately improved and got rapidly well. I have used the same plan of treatment ever since with very satisfactory results—a large blister, and fifteen grains of P. Ipecac. Co. every four hours. The *modus operandi* I do not attempt to explain, but I am satisfied when I find that the pain is relieved, that the bowels are not at all constipated, and that the case progresses favourably. To return to Chloride of Ammonium, I may add that a very useful application of this drug is in the treatment of some headaches. When there is no necessity for purgation, when quinine, or quinine and iron fail

to relieve the headache, when I can find no reason for it, I try Chloride of Ammonium, and it rarely fails to afford relief. About a fortnight ago a gunner came to hospital complaining of headache coming on every evening and often persisting for nearly twenty-four hours; his bowels were free, he was not liable to fever; however I tried rhubarb and soda for two or three days, then quinine and iron, but without the slightest effect; I then ordered the Chloride of Ammonium in scruple doses once a day. After three days of the treatment the headache diminished and is now quite gone.

ART. XI.—*Observations as to the Outbreak of Cholera in Bangalore Pettah in September* 1869. By Surgeon Major J. KIRKPATRICK, M. D., Mysore Commission.*

* PRECEDED by two cases on the 9th and 14th among travellers halting in the outskirts of the town, particulars of which will be afterwards given, it commenced among the residents on the 15th September, and ceased on the 20th October. Between these dates 346 seizures and 171 deaths were reported by the Police. Some of the last reported cases were ascertained not to be cholera, and probably a good many more were also merely attacks of indigestion or diarrhœa, as the mortality towards the close of the epidemic was exceptionally small. The cases and deaths were most numerous between the 22nd and 29th September, and occurred mostly in a circumscribed part of the town, rather high and dryly situated, but densely populated, with low flat-roofed scarcely ventilated houses, which are closely packed together and merely separated by very narrow and very dirty lanes. The inhabitants of this part of the town mostly get their water from three bowries supplied by underground channels from the Durmaboody tank, the waters of which are muddy but said to be sweet and wholesome, or from two wells below the bund of the tank, in

* These observations are intended merely as a report on an attempt to trace the introduction of cholera into the place; and therefore the facts only, so far as they could be ascertained, and not my own views as to the transmission of the disease, are stated. The question of treatment is not entered upon. The paragraphs marked * appeared in my Annual Report for 1869

which the water is clear, but liable, it is said, at certain seasons of the year to cause catarrhs. Subsequently cases occurred scattered over several parts of the town, which do not differ much in their general condition from that above described except in being generally on a lower level. I understand that throughout the town the inhabitants mostly resort for the purposes of nature to cess pits within their back yards, and that these cess pits are cleared out only occasionally, once in 6, 12, 18 or more months. The classes who are said to have suffered most are the Lingayets, Weavers, and Kompties, and it has been remarked as a peculiarity of this epidemic that it attacked the Lingayets, who (in the Pettah) are said to have entirely escaped for many years during previous visitations of the disease. I am unable to give any personal corroboration of this latter statement.

There were five cases of cholera admitted into the Bowring Civil Hospital between the 25th August and 13th September, being all travellers received into Hospital direct from the railway terminus, and four are noted as pilgrims from Triputty. Though these cases were thus received into that Hospital, which adjoins the Cantonment bazaars, and though doubtless travellers and pilgrims resorted to the Cantonment bazaars nearly, if not quite, as much as to the Pettah, it was only in the latter that an epidemic broke out. Why the one place should have been spared from the infection, if such it be, of the disease, and not the other, is hard to explain.

* From the District Medical returns of the Nundydroog Division, it appears that prior to the outbreak of cholera in the Pettah, the disease had appeared about the end of August and beginning of September, though not with any great violence, in several localities of the Toomkoor and Kolar Districts, but particularly in the latter which is the eastern district, and this synchronously with the passage through the country of numerous pilgrims to and from Triputty, among whom the disease had shown and was still showing itself at the time of the outbreak. This coincidence has led to an opinion, that the importation of the disease into the Pettah was due to these pilgrims, and though there may be a probability that this was really the case, the result of my inquiries has been a failure to obtain any direct proof or trace of such importation.

The great festival at Triputty did not commence till the 6th October, when the disease was declining here and in other parts of the Districts. It lasted ten days, and I observe from the newspapers that, though cholera had been imported into the place by travellers or pilgrims previously to the occurrence of the feast, the disease did not then spread to any great extent, owing, it is supposed, to the adoption of sanitary measures. The dissemination of the disease in the eastern parts of Mysore and in Bangalore was therefore not due to pilgrims returning from the great festival, but its existence was coincident with the previous passage of the earlier pilgrims through the country, who, it may be remarked, do not all await the festival but completed their devotions beforehand. I am not aware whether many pilgrims to Triputty came from the Astagram Division, but the cholera did not spread to it.

From the record of deaths in the District Season Reports as shown in the following tabular statement, it seems that cholera had first shown itself this year in the Chittledroog District after a period of unwonted immunity of the territory generally. It afterwards affected the northern and eastern parts of the country only, and as the disease had previously visited the Ceded Districts, the Hyderabad Country, and the Central Provinces, it seems almost as if Mysore had come within an outer circle of that great wave of cholera, which beginning at or about Allahabad, has worked such destruction through the Upper and Central provinces of the Bengal Presidency during the present year.

Deaths from Cholera in 1869.

Districts.	April.	May.	June.	July.	Aug.	Sept.	Remarks.
Bangalore....	...	...	...	1	...	157*	*In Pettah.
Kolar.	...	...	...	2	13	90	
Toomkoor....	...	...	...	...	23	35	
Mysore..... ...	...	...	...	...	...	..	
Hassan..... ...	...	...	...	...	7	15	At a place on
Shimogah ...	...	...	...	2	9	20	the Toom-
Chittledroog.	...	2	16	55	23	3	koor border
Kadoor	...	...	...	...	in 2 places.	31	

Between the 1st and 14th September there was only one admission into the Pettah Hospital from diarrhœa, a pil-

grim, on the 10th; and among the 32 deaths registered in the Pettah Mortuary records during the same period, there was only one of diarrhœa and cough, from which it appears that no unusual prevalence of ordinary bowel complaints preceded the epidemic. Though I do not see that any inferences can be deduced from it, I append a table showing the rainfall and level of the subsoil water in a Pettenkofer well, for some time before and after the epidemic. At the time this broke out the weather was only so far unseasonable or remarkable that the westerly monsoon with strong winds and somewhat cloudy sky had continued to prevail, instead of the usual muggy sultry weather of the middle of September. There had been unwontedly heavy rain in the early part of August, and but little in the early part of September. It will be observed that the level of subsoil water rose slowly for some time before the epidemic, and it has continued to do so ever since.

The information as to the following cases was principally got for me by the police. On trying to test it in two of the first cases some grounds appeared for not placing implicit credence in its correctness, though I believe it was collected with great care, and is generally reliable. These doubts are shown in the narrative of the cases, and are not altogether cleared up by the testing, which however served to show the difficulty of getting accurate accounts of such visitations.

No. 1.—On the 9th September 1869, "a pilgrim from Triputty was found dead in Kistapah Naidu's compound (not far from the Durmaboody tank). An inquest was held, and the jury was of opinion the man had died of cholera."—*Extract of diary from police station near Poorniah's Chuttrum.*

No. 2.—On 14th September, Krishna, a pilgrim from Triputty, was brought into the Pettah Hospital with cholera, from Kichetty's Chuttrum where he had arrived ill. This Chuttrum is just outside and to the north of the Hospital compound: no other cases of cholera occurred in it, and it was soon afterwards shut up temporarily by order of the civil authorities to prevent travellers lodging there during the continuance of the epidemic. This patient recovered.

No. 3.—On the 15th September Lingamah, a resident, was taken ill with cholera and died on the following morn-

ing early. She was "no relation of No. 2's, and had no communication of any kind with him. Used the water of the Sivajee Karengee or well No. 2 in the Chickpetta street. Had been to one Dondapah's house not far from her own to spin silk, and returned home in the afternoon ill. Several strangers (or travellers) came to Dondapah's house on that day as usual, but it is not ascertained whether any of those strangers had come from Triputty or had any communication with the numerous pilgrims from that locality." On investigating the above police information through an Hospital Assistant, the Inspector of Police, and personally, it appears very certain that there had been no pilgrims at Dondapah's or the woman's house, and very doubtful even if there had been any travellers, though some traders from Dharwar or Bellary, who had been staying for some time in the neighbourhood and who left the place immediately on hearing of the outbreak, had probably visited Dondapah's house. While the Hospital Assistant was questioning Dondapah, some of the neighbours who were listening expressed some irritation, and desired that there should be no more questioning about an infliction from which they had suffered enough, and which they hoped might be no more thought of. On personally questioning a relative in whose house the woman died, he said she had no communication with pilgrims, and that they had received no old clothes or goods from any where. The well alluded to is at least fifty yards from Lingamah's house, and is a square bowrie about six feet in diameter, twenty feet deep to the surface of the water, parapeted and faced with large well-joined granite slabs. The water, which is drawn by ropes and chatties, is muddy and is supplied by an underground channel which opens from the Durmaboody tank, at a part some considerable distance from Poorniah's and the other Chuttrums where travellers and pilgrims put up. The locality of Lingamah's house is in the centre of a very thickly inhabited part of the town, a short distance from Chickpett street, from which the approach is through narrow lanes not more than four or five feet wide, and with an ill-covered drain down their centres. The house or hut is flat-roofed like the rest, and situated at one side of a small opening of rather damp-hollow ground, on which are two or three latrines or dung-heaps, and around are some ruined walls, forming altogether a most insalubrious-looking locality.

No. 4.—On the 15th September, Somanah, a resident, (of Goodoomienpett, part of the Pettah) was taken ill late in the afternoon with cholera, and died early the following day. "Distantly related to No. 3. Worked in Bussetpett in the house at the back of No. 3 on that day, and returned home in the afternoon ill. Had been in and out of No. 3's house during the day, and had seen No. 2 even when she was ill. Several strangers had come to the house in which he worked on that day as usual, but it is not ascertained whether any of the strangers had come from Triputty or had any communication with the numerous pilgrims coming from that locality. Used the water of the Gowry Chetty bowrie below the Durmaboody tank, in the Chuttrums near which pilgrims had for days previously been putting up on their way to their destination."*

The Hospital Assistant was informed that Somanah was a boy of eight years of age, who had not been out of the Pettah for many days previous to his getting the cholera, that no strangers had been to his house or the surrounding ones, and that the people of his house were in the habit of using the Karenjee water.

No. 5.—On 16th September, Lutchmaboy, taken ill, and died the following day. Related to and lived in the same house as No. 3.

No. 6.—On the 16th September, Thogamah, taken ill, and died next day. "No relation to any of the above-mentioned, but lives in the house immediately in front of Nos. 3 and 5, had seen them when ill, and the former when put out for burial. Used the water of a well below the Durmaboody tank."

No. 7.—On the 17th September, Mootamah, taken ill, ultimately recovered. "Aunt of No. 6 and lived in the same house."

No. 8.—On the 17th September, Tippiah, taken ill. "Brother of No. 6 and lived in the same house."

No. 9.—On 17th September, Nursojee. "No relation to any of the above-mentioned. His house is not far from any of theirs. His brother had visited him on that day from Goodoomienpett where he had seen and known of

* Police information.

No. 4's illness. Used the water of No. 1 well in Chickpett street." This well is a square bowrie or tank faced with stone steps, by descending which the water is drawn. It is also supplied by the Karenjee from the Durmaboody tank.

No. 10.—Soobarajah, on the 18th September. "Nephew of No. 9 and lived in the same house."

No. 11.—Soobarow, on the 18th September. "No relation to any of the abovementioned, but his house is alongside that of Nos. 9 and 10. Used the Gowrie Chetty bowrie water." This Gowry Chetty well is one of the two wells with clear spring water which were above alluded to as being much resorted to by the inhabitants of that part of the Pettah where the disease was most severe.

No. 12.—On the 18th September, Venketrungapah. "No relation to any of the abovementioned. His house is alongside No. 11, the children from which had been in and out of his house all that day as usual. Used the Gowrie Chetty bowrie water."

No. 13.—On the 19th September, Taccoboy. "No relation to any of the abovementioned. Her house is just behind No. 11's. Used the water of No. 1 well in Chickpett street."

No. 14.—On the 19th September, Venkooboy. "Daughter-in-law of No. 13, and lived in the same house."

No. 15.—On the 19th September. "No relation to any of the above mentioned. Her house is pretty centrically situated with respect to all the others, and she was aware of the attacks and deaths during the days previous to that on which she was attacked. Used the water of the Gowrie Chetty bowrie which is situated below the Durmaboody tank as before mentioned."

After the 19th the cases became so numerous that their succession could no longer be traced. With the exception of No. 2, no cases were admitted into the Pettah Hospital till the 20th, after which six cases were received. In the early part of October, but the precise date has not been recorded, one of the Pettah Hospital toties was taken ill, and had a slight attack. He had two days previously been attending, though for a short time only, to a cholera patient who had been received into the hospital temporarily, preparatory to being sent to the cholera-shed hospital, and he

had been occasionally to the latter with messages, supplies, &c. This is the only instance within the recollection of Apothecary D'Cruz who has been 20 years attached to it, of any of the Pettah Hospital establishment having been taken ill with cholera.

From the above narrative the intimate connexion of the cases among the residents appears very striking, but there is nothing in it to prove the communication of the disease to the first sufferers by importation from without, and all that can be shown is that the outbreak in the town was consecutive to its appearance in several parts of the surrounding country, and coincident with the passage through the country and town of travellers or pilgrims, going to and from Triputty, among whom the disease had shown itself. The use of the same wells is noticeable, but the contamination of them by pilgrims could not be proved.

P. S.—Since the above was written it has been learned that two fatal cases of cholera took place on the 25th and 26th August in a Muntapum a short distance out of the northwest gate of the Pettah and not far from the Durmaboody tank. The persons who died were pilgrims returning from Triputty to their native district Mangalore, and a fellow traveller of theirs had suffered from diarrhœa on the road.

Distance level of subsoil water from surface of ground.

Dates.	August.		Sept		Oct.		Height of water in Pettenkofer's well.						Remarks.
	Rain fall.						Aug.		Sept		Oct.		
	Inches	Cents.	Inches	Cents.	Inches	Cents.	Feet.	Inches	Feet.	Inches	Feet.	Inches	
1st.	...	65	...	...	...	75	...	...	39	4	39	...	
2nd.	1	90	...	...	...	10	...	...	39	4	39	...	
3rd.	2	52½	...	25	...	...	...	...	39	4	39	...	
4th.	...	90	...	...	...	...	...	...	39	4	39	...	
5th.	...	...	...	22½	...	...	...	...	39	4	39	...	
6th.	...	...	...	...	...	...	...	...	39	4	39	...	
7th.	...	15	...	...	...	...	...	...	39	4	39	...	
8th.	...	...	...	...	...	...	...	...	39	4	38	11	
9th.	...	20	...	...	...	95	...	...	39	4	38	11	
10th.	2	45	...	...	5	70	...	...	39	2	38	11	
11th.	...	...	...	...	...	70	...	...	39	2	38	5	There was a rise of the Thermometer of 2 degrees from the 9th to the 12th September, and a fall of 4 degrees on the 13th after a shower on the 12th. On the 14th, 15th and 16th the Thermometer rose again 1 degree above that on the 13th. These observations refer to 9·30 A. M. The wind was S. S. W. and the weather cloudy with slight rain from 13th to 20th September.
12th.	...	...	...	52½	...	...	...	...	39	2	38	5	
13th.	1	60	...	...	...	...	...	...	39	2	38	4	
14th.	...	...	...	...	...	...	...	...	39	2	38	4	
15th.	...	70	...	...	...	...	...		39	2	38	4	
16th.	...	...	...	15	...	...	...	...	39	2	38	4	
17th.	...	...	...	10	...	...	...	...	39	1	38	4	
18th.	...	65	...	...	...	...	...	...	39	1	38	4	
19th.	...	5	...	15	...	...	...	..	39	1	38	4	
20th.	...	...	...	...	...	...	40	2	39	...	38	4	
21st.	...	...	...	...	...	...	...	...	39	...	38	4	
22nd.	...	...	...	...	...	...	...	...	39	..	38	4	
23rd.	...	...	...	...	...	5	...	..	39	...	38	4	
24th.	...	15	...	...	...	15	...	...	39	...	38	4	
25th.	...	...	...	52½	...	20	...	...	39	...	38	3	
26th.	...	...	...	85	...	...	...	...	9	..	38	2	
27th.	...	...	...	20	...	...	...	...	39	...	38	2	
28th.	...	30	...	15	...	35	...	...	39	...	38	2	
29th.	...	5	...	...	...	15	...	...	39	...	38	2	
30th.	...	10	...	...	...	...	...	..	39	...	38	2	
31st.	...	...	...	...	...	...	...	.	39	..	38	2	
Total	12	37½	3	12½	9	10							

Art. XII.—*Notes, Therapeutical and Pharmaceutical.* By G. Bidie, M. B. & F. R. G. S.,

Jasminum Sambac.

(*Illustration* :—Wight's Icones, Vol. II. t. 704.)

Native Synonyms :—Mogre-ke-phul, *Hind.*; Mulligaippu, *Tamil*; Malle-puvvulu, *Tel.*

Description :—A scandent shrub; branches and petioles pubescent; leaves simple, short-petioled, ovate, or subcordate, often acute; racemes terminal, ebracteate, few-flowered; segments of calyx subulate; flowers white, fragrant, appearing in the hot season.

There are upwards of thirty indigenous besides several exotic species of jasmine found in India, and the flowers of all have very much the same smell, depending on the presence of an essential oil. In some parts of the country the flowers are considered lactifuge, and Dr. Mackenzie, C. B., lately mentioned to me, that in two instances in which he had occasion to use them in this way their powers were very marked, and rapid in their effects. In the first case his patient, an English lady, had suffered considerably from post partum hæmorrhage, and it was therefore considered absolutely necessary, to forbid her nursing the child. The secretion of milk however was unusually copious, and distended the mammæ to such an extent as at length to cause great distress to the patient, and some anxiety to her medical attendant. The ordinary means were employed to arrest the flow and relieve the distention, but, in spite of every effort, the breasts continued so intensely tumid, that serious consequences seemed inevitable. At this crisis a native servant told the lady's husband, that he knew a remedy which would afford immediate relief. On enquiry as to its nature, it was stated to consist of the flowers of the common jasmine, and after seeking further information, as to whether the flowers had ever been used in similar cases without bad consequences, Dr. Mackenzie consented to give them a trial. Accordingly several handfuls of these were procured, and applied to the breasts like a poultice. The effects were of course watched with some curiosity and anxiety, and strange to say in a few hours

the application afforded complete relief, and the secretion of milk was from that time entirely arrested. The results of the other trial were equally satisfactory, and Dr. Mackenzie suggests, that the lactifuge power of the jasmine was probably accidentally discovered, by the milk disappearing from the breasts of native mothers wearing garlands of the flowers. The essential oil that they contain is no doubt the active agent, and its exudes freely when the flowers are subjected to warmth and pressure, as they necessarily are when applied to the mammæ like a poultice. In the Pharmacopœia of India similar properties are ascribed to the flowers on the authority of a most trustworthy observer, the late Mr. J. Wood, and I hope that others who may have had experience in their use, in this way, will kindly communicate the results to the columns of this journal.

ORMOSIA TRAVANCORICA.

(*Illustration*:—Pl. XLV. Beddome's Flora Sylvatica.)

Description.—A tree, young parts fulvo-tomentose; leaves glabrous, 8-14 inches long by 4-7 broad; leaflets about 5-6 pairs with a terminal one, oblong to elliptic with acute or obtuse point at the apex, 2-6 inches long by $\frac{3}{4}$ to 2 inches broad; petioles $\frac{1}{4}$ to $\frac{1}{2}$ inch long; panicles in the upper axils shorter than the leaves, fulvo-tomentose, as are the calyx and bracteoles, many flowered; flowers very shortly peduncled in pairs along their branches; legume very hard, woody, 2-2$\frac{1}{2}$ inches long by 1$\frac{1}{2}$ broad, 1-2 seeded, seed bright scarlet. Beddome's "Flora Sylvatica," p. 45.

Habitat. Travancore, South Tinnevelly Hills and South Canara Ghats.

Some two or three years ago the Dewan of Travancore, Sir T. Madava Row, K.C.S.I., kindly sent to the Agri-Horticultural Society samples of an oleo-resin, said to be extracted in large quantities from a tree growing on the hills of Travancore, and to be used by the hill tribes for burning in lamps or torches. Specimens of the leaves and fruit of the tree accompanied the balsam, but in the absence of the flowers it was found impossible to identify the plant further than to say, that it belonged to the very large family of Indian Leguminosæ. Since that time however Major Beddome has procured perfect botanical specimens of it,

and found that it is a new species of the genus Ormosia, to which he has given the name of O. Travancorica. The oleo-resin is a reddish-brown fluid about the consistence of castor oil, having a resinous odour and somewhat acrid and disagreeable taste. Like other articles of the same class it is insoluble in water, but soluble in alcohol and in fixed and volatile oils. It occurred to me that as in its physical properties it somewhat resembled copaiba, and was got from the same family, it might possess similar therapeutical powers, and I therefore sent a small quantity of it to Dr. Paul of the General Hospital, for trial in the treatment of gonorrhœa. He used it exclusively in several cases, and informed me, that it had proved just as efficacious as Copaiba. The dose required is about the same as that of the latter remedy ; and as a second supply is now in course of trial in the General Hospital, further information as to its medicinal virtues will shortly be available.

DISPENSARIES IN MADRAS.

WE have received a Selection from the Records of the Madras Government, which on its title-page purports to be the "Annual Report of the Civil Dispensaries, Session 1868-69;" but which really refers to the calendar year 1868. The Report is dated the 28th July 1869, and the Order of Government upon it, 9th May 1870. The information is somewhat out of date, but there are a few points in the Report, and the extracts appended to it from the reports of the several medical officers, which may be interesting to many of our readers who have neither time nor inclination to look through 182 pages for themselves.

The general health of the people was good during 1868, although the rainfall was below the average. Cholera was almost quiescent, 82 deaths being recorded in the Dispensary returns of the entire Presidency; of which only thirteen occurred in the Presidency city, where the disease is generally considered to be endemic. From April to December 1868, only two deaths from cholera were reported in Madras—"a fact without precedent in the history of the town." 280,800 out-patients and 17,658 in-patients, making a total of 298,458, were treated in the Civil Hospitals and Dispensaries, showing an increase of 23,192 over the previous year. These numbers show that these institutions are doing good work, but they also show how miserably little that good work is in comparison with the wants of the country. What are they among so many? What proportion to the sick and wounded of the millions of the Madras Presidency do the 298,458 treated bear? The financial condition is "in much the same state as before," and will continue so, in all probability, until the Local Funds Bill or some similar measure makes adequate provision for steady and efficient mainte-

nance. The "voluntary system" as applied to the support of Dispensaries by natives who do not themselves believe in European medicine has not been a brilliant success; but by persistent efforts on the part of European officers, civil and medical, a capital of Rs. 4,69,850 has been scraped together. All the Dispensaries are kept open, (Government supplying medical attendance and medicines besides a small and fluctuating income from the sale of the latter) and some of them are in easy circumstances; but the complaints of inefficiency from want of funds are numerous. The European communities contributed Rs. 16,545 during the year, Natives Rs. 56,472. We earnestly hope that the wretched farce of "voluntary" contributions by natives for this purpose may be terminated soon. Nothing can be more humiliating to the Collector or the Medical Officer or even the wealthier natives themselves, than the meetings periodically convened when Dispensary funds run low, to impress upon natives, official and unofficial, the duty of giving money to help Government to support a State institution. Neither the mendicancy of the European nor the present compliance, with subsequent evasion, of the native is a pleasing sight or affords a healthy moral lesson. Looking through the reports of the Civil Surgeons, we see some illustrations of this kind of thing. At Bellary "subscriptions are collected though with difficulty." In Conjeveram

"The richer classes of the community here now resort more freely for treatment and express confidence in European aid, but they will not subscribe a single anna towards the Dispensary for the benefit of their poorer sick brethren. * * * The appeals of the Committee for subscription have been productive of no response from the stolid niggardliness of the wealthier classes. Donations promised to the Institution in 1866, still show a very large balance uncollected from the numerous and frivolous excuses put forth for non-payments."

At Masulipatam funds were low, and the Acting

Collector convened a special meeting of the rich merchants and other inhabitants. Three European officers, three native officials, and *one* merchant constituted the meeting. As the convener pathetically wrote—

"This is the result of the notice in the *Gazette*, and of invitation by individual printed circulars sent to all the principal merchants, sowcars and the inhabitants of the town, in conspicuous parts of which copies of the notice were stuck up for general information * * * The only merchant present has not much faith in the readiness of his brethren merchants to assemble for such purposes, and is of opinion that a meeting at whatever hour held will have the result of the present. It is thought better to try, however, and the present meeting resolved to call another meeting * * * Meantime subscription papers will be circulated through the town in the hope of much good being the result."

In which hope of the sanguine Acting Collector we regret our inability to share. At Vellore "there are numerous nominal native subscribers on the list, who never pay."

We are glad to notice attempts made in several places to train pupils in elementary medicine and surgery or midwifery. At Cuddapah a "scheme for instructing and training the sons and relatives of Native Physicians of the District at the Dispensary" was begun in August 1867; and at the date of Native Surgeon Iyasawmy's report "four young men—one Brahmin, one Mussulman, and two Hindoos" were under instruction. Three of the pupils were sons of Native practitioners of the town. A monthly stipend of Rupees 7, raised from private sources, was allowed to each student. At Madura three natives were in attendance as pupils; two being maintained by a zemindar and the other by the Dispensary Committee. Owing to their ignorance of English, however, (or, as it probably appeared from their point of view, their teacher's ignorance of their language) their progress was not very satisfactory. At Manargoody, where there is a lying-in ward under the able

management of Native Surgeon Mootoosawmy, (in which seventeen women were delivered during the year), "four female pupils were entertained on the 1st April 1868, and instruction in practical points of midwifery has been afforded to them. They have made fair progress on the subjects taught them; of these four, one resigned in August last, and the others will leave the institution in March to practise on their own responsibility; another batch of pupils will be engaged in the beginning of next official year." In Madura also there is a Lying-in Hospital in which 67 women were delivered during the year, and where a female pupil was instructed for two years who settled and is practising at Ramnad. Since her departure another pupil was entertained for instruction.

As regards special therapeutics there is scarcely anything in the Report. We may notice Mr. J. Wilson's remark that, at Coonoor, in some cases of chronic dysentery he "found a combination of sulphate of magnesia and dilute sulphuric acid successful in removing the disease, after other treatment had failed." Dr. Whitton's remarks on the great prevalence of parasitic worms at Cochin are interesting.

"As usual," he says, "so far as numbers go, vermes heads the list. It is extraordinary how very common the disease is in this part of the coast, and how many diseases it will simulate. A patient will present himself with apparently one of the following diseases: dysentery, diarrhœa, anasarca, indigestion, colic, intermittent fever, or lumbago; the disease may eventually prove to have been caused from the presence of ascarides and so well have I become aware of this fact, that invariably when in doubt I commence the treatment with a few grains of santonine, followed by a dose of castor oil. With young children I do not find so much difficulty in diagnosing the disease. If the history of the case shows that, previous to present suspicious symptoms, the child suffered from fever on several consecutive evenings, I look upon this as the surest diagnostic sign in a doubtful case."

SALE OF POISONS IN IRELAND.

A BILL for the regulation of the sale of poisons in Ireland was introduced on the 24th May, and will, it is hoped, be passed this Session. A Schedule of Poisons is attached containing 22 poisons, to which the Dublin Apothecaries' Hall may, with the approval of the Irish Privy Council, make any additions which may from time to time seem desirable. The seller of any of these substances must know the buyer, either directly or through the introduction of a third party known to both, and all particulars of each sale must be entered in a book kept for the purpose—the entry being signed by the purchaser, and the person (if any) who introduced him. Poison forming part of a medicine dispensed by a duly qualified apothecary, if the medicine is properly labelled and the ingredients entered in a book, with the name of the buyer or recipient, does not come under the provisons of the Bill, and the old Act, which regulates the sale of arsenic only, is not repealed. The Act for preventing the Adulteration of Articles of Food or Drink is declared to extend to articles usually taken or sold as medicines, "and every adulteration of any such article shall be deemed an admixture injurious to health." No licence, or any other qualification is required for the sale of poisons, and sale only, not possession, is made penal.

REVIEWS.

RECENT CONTRIBUTIONS TO THE LITERATURE OF ASIATIC CHOLERA.

1. *Epidemic Cholera in the Bengal Presidency.* By JAMES L. BRYDEN, M.D., Surgeon Bengal Army, Statistical Officer attached to the Sanitary Commissioner with the Government of India. Calcutta: Office of Supt. of Govt. Printing. 1869.

2. *A Treatise on Asiatic Cholera.* By C. MACNAMARA, Surgeon to the Calcutta Ophthalmic Hospital. London: John Churchill and Sons. 1870.

3. *Statistics of Cholera.* By EDWARD BALFOUR, L.R.C.S.L., Deputy Inspector General of Hospitals, Madras Army. 2nd Edition. Madras: Athenæum and Daily News Office. 1870.

4. *Address to the Bengal Branch of British Medical Association.* By J. MURRAY, M.D., Inspector General Indian Medical Department. Calcutta: *Indian Medical Gazette,* March 1870.

(Continued from page 63, No. VII.)

Mr. Macnamara points out that the endemic sites of cholera in India have yet to be determined. He is not inclined, like the members of the International Sanitary Conference, to limit the endemic tract to the valley of the Ganges, and a few localities in the Madras Presidency. As regards Upper India, he says "we shall not be probably far wrong if we draw an imaginary line to the north-east through Saugor, Allahabad, and Gorruckpore, to the foot of the Himalayahs: throughout the whole of the plains to the east of this line, cholera is endemic, the intensity of the disease increasing as we approach the seaboard of the Bay of Bengal, the cities of Dacca and Calcutta being pre-eminently the stronghold of this terrible malady."

Along the valleys of the Nerbudda and Taptee rivers, Mr. Macnamara considers cholera to be endemic. As regards the sea-coast of Southern India, we have reason to suppose that cholera is truly endemic on a narrow strip of the Coromandel coastline, and especially in situations where the natural drainage of the country is discharged into the sea through alluvial tracts, as in the districts of Tanjore and Madura.

Mr. Macnamara appears to us to be mis-informed in regard to the character of cholera in the Bellary district. It is there always an invading or reproduced cholera, but not an endemic. Dr. Bryden, in limiting the field of endemicity to lower Bengal, has, we conceive, been led into error, and especially in regard to cholera attacking the Central Provinces, which so far as we can see, usually takes its rise in the endemic field of the Nerbudda valley, and does not invade from the east, as Dr. Bryden would have it.

In the geographical spread of cholera beyond Indian limits, our author has, we think, proved his position that in the extension of the epidemic to Europe, cholera follows one of two routes, "Either along the Red Sea into Egypt, or else along "the shores of the Persian Gulph, and of the Tigris or "Euphrates, passing into Europe via Astrachan, or else gain-"ing Orpa and Aleppo, and so reaching the Turkish "dominions in Europe." Cholera has undoubtedly travelled from the Punjab through Cabul, Herat, along the Caspain Sea, and Northern Persia into Europe. As yet the P. and O. Steamers have never imported cholera into Egypt, but now that the Suez Canal is opened, and a different class of steamers and of owners are pushing forward to share in the trade with India, it will be curious to note how long a period will elapse before the direct importation of cholera into European ports is an accomplished fact.

In the fourth section of his work Mr. Macnamara treats of the bearing of meteorological influences upon the spread of cholera. He thinks that the chief fact to be relied upon is that cholera in India "is epidemic after downpours of rain, followed by intensely hot weather."

"In districts absolutely free from moisture, cholera can only "be generated to a very limited extent." So far Bryden and Macnamara are generally in accord, but we question whether they have not laid too absolute a stress on the element of moisture. As an example, we may mention that

although the north-east monsoon of 1868 failed all over the country, it did not prevent invading cholera coming down south from the Central Provinces, through Hyderabad and the Kurnool district of the Madras Presidency, and in 1868 Townsend of Nagpore records that cholera affected most severely the villages on hard trap rock, during the prevalence of hot dry winds.

However, we think that there can be no doubt that a certain amount of moisture or rainfall is essential to the starting of an epidemic ; heavy rain, which saturates the soil, may have the effect of diminishing the disease for a time, but heavy rain does not usually continue for many days together, and is usually followed by still sultry weather, which is most favorable for the encouragement of violent explosions of cholera in suitable localities.

As regards the influence of the south-west monsoon, Macnamara follows Bryden in admitting that this is the normal period of cholera activity in the regions above Bengal, but he does not, like Bryden, argue that the wind carries the cholera. Mr. Macnamara's explanation is wholly different.

"When the south-west monsoon sets in over Bengal, the river Ganges becomes the great high-road of traffic between the home of endemic cholera and the south-western provinces. After the cold season crops have been gathered in, and the monsoon has fairly begun to blow over Bengal in April and May, large fleets of country boats start on their journey from Calcutta, Dacca, and other emporiums of trade, for Patna, Benares, Allahabad, Mirzapore and Cawnpore, which latter place they reach about August. A few of these boats sail up the Jumna, as far as Agra and even Delhi. They return to the lower provinces before the Ganges subsides in September."

The town of Mirzapore, Mr. Macnamara looks upon as second to no place in India in regard to the diffusion of cholera, it being the chief commercial depot for merchandise passing to and from Bengal, from Central India and the North-Western Provinces.

At the time of writing his book, Macnamara had not seen Dr. Bryden's book, but it is important to note that he objects to the notion of the monsoons being the disseminators of cholera on the following grounds :—

1. Because we find that people living on the hills of Lower Bengal, and therefore under the influence of winds blowing over the endemic area of cholera, are yet free from the disease.

2. The wind has never conveyed the disease from the coast of Burmah or India, to the Andaman Islands.

3. We have the direct testimony of independent observers that in the great epidemic of 1818, cholera advanced down the Madras coast, and across to Bombay, against the prevailing monsoon. Again, in 1849, Dr. Leith informs us that cholera advanced from the East in the teeth of the south-west monsoon then blowing with a force equivalent to a velocity of twenty-five miles an hour.

4. If the south-west monsoon carries the seeds which engender cholera in the human body, from east to north-west, as far as Cawnpore, why does it stop there?

The disease should be disseminated over the whole country, including the North-West and Punjaub every year, if carried by the prevailing wind.

5. It is impossible to explain the extension of cholera from Alexandria over Europe in 1865, and its steady progress from east to west over Europe and America on previous occasions, on any theory which obliges us to accept the wind as the chief influence which causes the spread of cholera.

6. Still less can we explain its advent in isolated localities, as the Mauritius, Fogo and Guadaloupe, and numerous other places, if we accept the monsoon theory.

7. Quarantine, when practicable, as at Peterhoff in 1831, in Palermo in 1865, and on several occasions in Greece, has prevented the ingress of cholera into these places, which could not have been the case had the disease spread by means of the wind.

In fact, I believe most firmly in the conclusions arrived at by the Cholera Conference of Constantinople on this subject, "that cholera is scarcely ever carried beyond a very short distance by the agency of the open air."

We have already given in our adhesion to similar opinions in the review of Dr. Bryden's Report.

In regard to the influence of rain in the production of cholera, Mr. Macnamara makes the remark that the rain accomplishes in this country what water companies often do in Europe, viz., it conveys by means of a contaminated water, the cholera poison into the systems of men.

While agreeing generally with Macnamara in his conclusions, we are enabled to bring forward a very strong argument against the power of monsoon winds to carry cholera to any distance. Take, for instance, the example of the Shervaroy Hills, an isolated mountain range from 3,000 to 5,000 feet above the sea, standing nearly mid-way in the peninsula of

India, between the waters of the Indian ocean, and with the sea coast about 200 miles distant on either side. These hills are freely exposed to the south-west and north-east monsoon winds. Rain falls heavily during both monsoons, and the "moist vehicle" necessary, according to Bryden, for the propagation of cholera, is rarely if ever wanting. During the half century in which these hills have been known to be inhabited by Europeans, they have never been subjected to a visitation of cholera. Yet the town of Salem, situated not more than seven or eight miles "as the crow flies," and twelve miles by road from the hill plateau, in the lowest part of a basin surrounded by hills, is annually swept by cholera. Hundreds of coolies pass up every week from the town to the mountain plateau. Some have been known to be seized with cholera and to die on the mountain top, and the same thing has happened to European visitors coming from the low country, but the disease has never spread amongst the hill tribes or the Europeans and East Indian settlers. While the whole of Southern India, as in 1866, was under the influence of cholera, these hills continued exempt. Yet the winds which play over the low country strike these hills fully, and if they contained the elements of cholera, the residents who are exposed to the free breezes of the mountain top, would stand but a poor chance of escape. The experience of fifty years shows that neither the winds of the south-west nor of the north-east bring cholera to the Shervaroys.

In the very few instances in which cholera has been known to occur, the disease could invariably be traced to importation. A case came under the personal notice of the writer in 1868, when an East Indian, coming from Malabar, where cholera was most virulent, was seized with the disease at the foot of the Salem Ghaut, and was brought up to his friend's house on the hills in a state of collapse. The case ended fatally, and although the man was surrounded by a crowd of relations, not another case occurred.

The elevation of the Shervaroy Hills is not so great as to bring them above what is called "fever range," for in the dry hot months of the year (April and May) malarious fevers are by no means uncommon. Their exemption from cholera, moreover, is not wholly explicable on the theory of want of intercourse with the people of the plains, for as we have seen, there is daily intercourse with the town of Salem,

where cholera is so constant in its appearance as to become an endemic disease.

Although the germs have been more than once introduced, they do not thrive in the elevated region of the hill plateau. The facts, as they stand, afford a very strong ground of objection to Bryden's theory of aerial transmission, and at the same time, they seem to afford support to the view that cholera germs will not flourish in particular soils or media. As regards the geological structure of the Shervaroy Hills, and of the Salem Valley beneath, there are scarcely any points of difference, except that the decomposed metamorphic rocks at Salem form a deep porous soil, which possesses the capacity of transforming organic matter into nitric acid, while the hill soils appear to possess no such property. The Salem Valley, moreover, receives the drainage of hill ranges all around it, and its soil in the lowest levels, where cholera flourishes best, is always hot and moist.

In the 5th Section of his work, Mr. Macnamara dwells upon the "Characteristic features of Asiatic Cholera."

The first of these he describes as "*unequal and partial distribution*," showing localization of action.

He very properly remarks, "We can hardly conceive "limited outbursts of disease, such as mark the progress "of epidemic cholera, to be due to any general atmospheri- "cal epidemic influences.

"We can hardly help feeling that there must be some "force at work more definite and limited in its operation "than this, when we see our soldiers in a particular barrack "or station struck down by cholera, while regiments on "either side of them entirely escape, precisely as though the "one set of men had been exposed to a murderous fire on "the battle-field, while the other had been kept as a reserve "in camp, and out of range of the enemy's bullets."

The second characteristic, though not altogether peculiar to cholera, is "the liability of localities having features in common to suffer, these localities differing from other places which usually escape the influence of cholera." The low-lying towns on the banks of rivers are, as a rule, the favorite haunts of cholera, as are also the low-lying tracts on the sea-board, which either now or formerly were saltwater lagoons or estuaries.

But it has been shown in India and elsewhere, that high table-lands and rocky plateaus are by no means exempted for cholera. Mr. Macnamara thinks that cholera occurs in special localities more frequently than elsewhere, because the general health of the inhabitants of such localities becomes deteriorated by exposure to unhealthy influences, thus predisposing them to a reception of the cholera virus.

A third characteristic of the disease noticed by Mr. Macnamara is that, it "by no means attacks the inhabitants of the most insalubrious localities even in large towns."

A fourth characteristic is "that no amount of overcrowd-"ing, no special condition of soil, nor any circumstances "with which we are acquainted has ever been known to "originate Asiatic cholera *de novo*, among men removed from "its endemic influence, or unless the disease has been epide-"mic at the time beyond the confines of India."

A fifth characteristic is a variation in intensity, "so that "it has periods of little and great activity; in fact, usually "well marked periods of increase, culmination, and de-"cline."

A sixth characteristic is that after having been a certain time epidemic in a locality, it entirely disappears, unless in its endemic area.

The explanation of the facts of the two latter peculiarities of cholera is not at all clear. Mr. Macnamara gives a good illustration of the mode in which seed growing for successive years in the same soil, gradually deteriorates in reproductive power, and he argues that cholera may be more active in the epidemic than the endemic field, because in the latter, successive reproductions have weakened its power. The following extract is not unworthy of attention in connection with this subject:—

"Much of my experience of cholera was gained in the district of Tirhoot, a great indigo-producing country, and every planter knows very well that, if he would get good produce from his plant, he cannot rely on the indigenous seed: he must import year after year from the north-west: if he sows seed from plants reared in the district, he may have a fine crop, but he will get little or no produce out of it.

"He acts upon the experience he has gained, and imports his seeds from localities far less famed for their indigo than Tirhoot; but this imported seed yields largely in that district. And so it is with

cholera: the imported disease is terribly prolific and fatal in its first year's growth on a new soil, and from that time it deteriorates in its power of destroying life, and gradually declines."

The converse of this illustration is often seen when strangers come within the endemic field of cholera: notably, when European sailors frequent a port like Calcutta. Here the virgin soil is brought to the seed, and the result is precisely the same as when the seed is introduced into a new soil, viz., increase of vigour and development of cholera.

The seventh characteristic noticed by Mr. Macnamara is "that every outbreak of the disease beyond the confines of "British India, may be traced back to Hindostan, through "a continuous chain of human beings affected with the "disease, or through articles stained with their dejecta."

In seeking for the proofs of this proposition, Mr. Macnamara acknowledges the value of the MS. records of the old Medical Board, which he thinks have never been sufficiently studied with reference to the subject of cholera.

"It was no slight task (we are informed) to undertake "the examination of nearly three hundred thick folio "volumes of MSS., but the result has amply repaid my labour, "and convinced me that the characteristic feature of the "disease above enunciated is a fact, and one which I could "never have fully realised had I not thoroughly examined "these reports."

We have never had any doubt that the Presidency Medical Boards had accumulated a vast amount of information on the subject of cholera. Much was published of the progress of the great epidemic of 1818, but since that date the records have not been so much used by investigators.

The eighth point which Mr. Macnamara notices, is "that "the more explicit the examination, the clearer the fact "appears, that the disease, in the majority of cases, spreads "from one human being to another by means of the cholera "fomes finding its way into drinking water, and thus into "the intestines of other people."

The water theory of Snow is rejected completely by Bryden, but it will be seen that Mr. Macnamara accepts it, and we believe that Dr. Townsend, Sanitary Commissioner of the Central Provinces, and others who have been engag-

ed in cholera enquiries, entertain no doubt whatever that water contamination has much to do with the diffusion of cholera.

In no country in the world are people more careless in regard to the purity of their water-supply than are the natives of India. They entertain a fixed belief that water is a universal purifier, and that although filthy clothes and dirty skins may be washed in it, no harm can happen to the water. This theory, strange as it is, is carried out to its logical conclusion. It is by no means an uncommon thing in the course of a morning ride in India, to see half a dozen natives defecating on the edge of a tank, while a still larger number may be seen bathing, washing clothes, and filling their chatties, from the water which, as a matter of course, is subjected to every-day fecal contamination.

Mr. Macnamara has given an instance in which a supply of drinking water was accidentally contaminated by cholera discharges, and of nineteen persons who partook of the water, five died in from one to five days, from the use of it. He very properly, we think, lays great stress on the circumstance, that in this water large vibriones were discovered, showing that the cholera matter was in the first or active stage of decomposition, at the very time when its poisonous properties were thus accidentally put to the test. That water may be capable of giving cholera on one day and quite innocuous a day or two after is, we think, quite in accordance with all that we know about the matter. Mr. Macnamara states as a fact which he has personally ascertained, that water consumed during the vibrionic stage of decomposition, which is capable of giving cholera, most certainly loses this power when various forms of ciliated infusoria have replaced the vibriones, and that the water in this latter condition may be drunk with impunity. The sudden outbreak, and equally sudden cessation of local cholera outbreaks, may be capable of explanation on the supposition of water-poisoning lasting only for a very brief period of time. The liability of water in tanks and reservoirs to go suddenly bad and putrid, is a phenomenon that may often be witnessed in India. We had a remarkable instance of it the other day in the Cooum river, the water of which, after displaying an unusual amount of phosphorescence for some days, went suddenly putrid. At the beginning of this stage of change, the water

was loaded with *vibriones, spirilia,* and other forms of life, but the sudden putridity appeared to be due to the death of the *spirilia*, for in a few days, when ciliated infusoria and green *confervæ* began to appear, the water became inoffensive. These changes took place in a salt water lagoon, but similar changes are of frequent occurrence, especially in seasons of high atmospheric temperature, in fresh water tanks, which supply large numbers of the population with potable water. Even in wells, unless they be regularly drawn from, water gets putrid and dangerous to use.

In legislating for the health of Indian populations, the Government of India will have to lay down more stringent rules for the conservation of the sources of supply of drinking water, than have yet engaged attention. Meanwhile, the practical point to be borne in mind, is that we cannot be too careful in examining from time to time the condition of the water we use, and in subjecting it to an efficient process of filtration before drinking it.

(To be continued.)

MEDICAL MISCELLANY.

On Sunstroke.—By GOUVERNEUR M. SMITH, M.D., Attending Physician New York Hospital.

DURING our summer solstice, we are liable to encounter a malady which is almost instantaneous in its attack, and which is remarkably rapid in its progress to a favorable or unfavorable termination. I refer to the affection known as *sunstroke*, *insolation*, *coup de soleil*, or, as it may better be denominated, *exhaustion from heat.*

That the solar ray, which is ordinarily so salutary in its influence upon human life, can excite disease is a somewhat singular fact. Etiolation is a condition which we more frequently observe than insolation. A large part of our population are insufficiently exposed to the sun's rays during the entire year, and to a certain extent this accounts for their blanched and enervated appearance. Hippocrates recognized the benign effect of sunlight, and particularly noted its favorable agency upon the aged. Pliny recounted the benefits to be derived from reclining in the sun, and it was a wise ancient custom to construct "solaria" or "solar air-baths" on the terraces of houses in which the immates could bask themselves.

During the same mythological age, lunar influence was supposed at certain periods to exert an unfavorable effect upon mankind, both exciting disease and augmenting the gravity of ordinary maladies. The term *lunacy*, still employed in our nosology, is expressive of this ancient belief. Certain phases of the moon were anticipated with anxiety, and the times of their occurrence were regarded as critical periods. Such crises, it was believed, recurred semi-monthly.

These views, which were held both by philosophers and by the illiterate, finally became mingled with the vagaries of the astrologists, and in the course of time were for the most part discredited. In modern times the same doctrine has been revived, and Mead, Balfour, Day, James Johnson, Mosely, and others, have advocated its truth. In India a malady occurs, denominated *coup de lune*, and which from the nature of its attack and of its characteristics may be regarded as an anologue of *coup de soleil.* Long exposure to the full moon, as when asleep in its ray, has popularly been regarded as a cause of disease. It is difficult to explain certain phenomena which have apparently corroborated this superstition. The more common interpretations which scientific men have given of such occurrences

have been, that morbid influences were induced either by the damp and chilly night air or by the polarized light of the lunar ray.

Quite recently the classical Dr. Forbes Winslow,* to whom I am indebted for these facts and views, has thoroughly investigated the entire subject, and has been led to think that possibly the observers of nature prior to the Christian era were not altogether wrong in their ideas concerning the lunar influence.

The phenomena of spring tides of the ocean are observed when the moon is in conjunction and in opposition; while neap tides occur when the moon is at the quarters of its orbits; and it is now contended that there are similar tidal floodings and ebbings in our atmosphere as shown by delicate barometrical observations, and that such aerial currents are not devoid of influence upon mankind. The critical periods, asserted by several observers to have been noticed in various diseases, have occurred when the moon was at its syzygies.

I have not the time, however, to discuss this point. If the science of the nineteenth century is to prove the correctness of such a tenet, we can more readily understand the meaning of the Psalmist when, in predicting the blessings of a future condition, he said—

"The sun shall not smite thee by day nor the moon by night."

Insolation is a disease induced chiefly by extreme solar heat. Many are stricken with the malady, however, who are not exposed to the direct rays of the sun. The general atmosphere becomes overheated, and consequently, within doors as well as without, the temperature is oppressive. Those who, during "heated terms," are employed in factories, laundries, kitchens, &c., where fires are required, are almost as liable to the disorder as though they were actively engaged in the midday sun.

In formerly studying the etiology of sunstroke I was led to conclude that heat was not the sole cause, and inferred so for the following reasons: A hot, *dry* atmosphere, it had been contended, might to a certain extent be resisted, for it allows free evaporation of moisture from the nostrils and air passages as well as from the skin, and the body is thereby cooled. If the *dew point*, on the contrary, is *high*, very little evaporation from the surfaces can take place, and the body more quickly becomes overheated. A fall or rise in the animal temperature of a few degrees is prejudicial to life.

In 1853, about 60 cases of insolation were treated in this hospital, and an admirable paper relating to them was published in the *New York Journal of Medicine* by Dr. H. D. Swift, Resident

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* Vide "Light, its Influence on Life and Health," by Forbes Winslow, M.D., D.C.L. Oxon. (Hon.), &c. Am. Edit., N. Y., 1868.

Physician, now deceased. During that season the dew point was very high, and quite a number of persons were prostrated in a laundry and sugar refinery, where the air was additionally surcharged with aqueous vapor, and it, therefore, seemed probable that two meteorological influences, viz., atmospheric heat and atmospheric moisture, were active agents in the causation.

Dr. S. B. Hunt, of Buffalo, in a review of Dr. Swift's cases, remarked, "the conclusion is irresistible that, not dry heat, but a long continued bath of aqueous vapor was the true cause of this unparalleled mortality."

Dr. Aitken informs us, however, in his work on Practice, that in India the chief cause is "prolonged atmospheric heat with a dry and rarefied state of the air." I have examined the records of this hospital for the last three years, and have noted the days upon which the majority of cases were admitted here: in 1866, 26 cases occurred; in 1867, but one; in 1868, 26.

On giving to Dr. Jonas P. Loines the dates of these occurrences, he has kindly furnished me with the following data:—

July, 1866.	Mean Temperature.	Mean Humidity. Saturation being 100.	Humidity 2 P. M.	Mean of Barometer.	Barometer 2 P. M.
7th.....	91° F.	37	50	29·94	29·99
8th.....	91° F.	38	43	29·92	29·93
16th.....	98° F.	36	25	30·06	30·04
17th.....	94° F.	58	56	30·04	30·05
July, 1868.					
14th.....	88° F.	54	40	29·99	30·06
15th.....	90° F.	73	73	29·87	29·90
16th.....	88° F.	56	35	29·89	29·90
17th.....	80° F.	55	53	29·99	29·98
18t.....	83° F.	75	69	29·99	29·99

In viewing these meteorological records, we mark that while the temperature on the days indicated was high, the humidity in 1866 was low, and in 1868 was moderate, excepting on the 15th and 18th, when it reached nearly as high a point as is ever attained here. The barometer indicated that the atmosphere was not rarefied, but, on the contrary, was rather more dense than is usual.

It would appear from such facts that extreme atmospheric humidity is not an essential element in the causation of insolation, and

again that atmospheric rarefication is not a necessary agency, as has been noticed in India. We learn, therefore, that an exposure to overheated air may over-heat the body ; but I think that there are facts to show that when the air is charged with moisture the liability to sunstroke is increased.

Those who perspire freely are not apt to become affected with the malady we are considering, but even in these persons the body may become so warm that diophoresis will cease. We observe, as a clinical fact, when treating cases of Bright's disease with the hot air or vapor bath, that if the air thrown under the bed clothing is too hot, the patient will not sweat and will suffer with dyspnœa ; if, on the contrary, the air is tempered, cutaneous transpiration will be induced and the anasarca melts away.

The experiments of Duhamel and Tillet in 1760, of Dr. George Fordyce, and Sir Chas. Blagden in 1774, of Dobson in 1775, and of Berger and De La Roche in 1806, have taught us that the body can for a short time tolerate intensely heated air as in an oven or tightly closed apartment.

Fordyce remained 12 minutes in an atmosphere of 220° F., and subsequently encountered a temperature of 260° F. Chabert, in this country, it is said, has withstood even a much higher degree. The majority of these persons have stated that the heat of their bodies did not rise above 100° F. Berger and De La Roche, however, have expressed themselves differently.

On the authority of Dunglison it is stated that " having exposed themselves for some time to a stove, the temperature of which was 120° F., their temperature was elevated $6\frac{3}{4}$° F.; and M. De La Roche found that his rose 9° F. when he had remained 16 minutes in a stove heated to 176° F."

While we are not naturally exposed to any such extreme heat, our climate has occasionally its feverish periods, and our inhabitants, unaccustomed to tropical weather, are at such times liable to become overheated and to be suddenly prostrated. A pyrexial disease, accompanied with a high thermometric condition, usually betokens a case of gravity. Of no less serious import is a sudden augmentation in the animal temperature.

The prodromata of sunstroke are few, and are said to be vertigo, weariness, oppression in the epigastrium, and occasionally surrounding objects appear colored of the same hue—more commonly blue or purple. In some instances there may be no warning, and the patient immediately falls insensible.

During the last three years there have been treated here 53 cases of this malady. The majority of these have occurred during the attendance of my colleague, Dr. Thomas F. Cock.

Of the cases referred to, 47 were males and 6 were females ; 38

were admitted in an unconscious condition, of which number 21 recovered, 16 died, and 1 was discharged insane. Seven were semi-comatose, of which all recovered; 5 were conscious and recovered; in 3 instances the condition on admission is not stated, and in these cases two were restored and one died.

In 17 cases the aspects of the pupils were noted; in 13 they were contracted, of which number 9 recovered and 4 died; in 3 they were dilated, of which two recovered and one died, and in one instance the pupils alternately dilated and contracted; the patient in whom this latter phenomenon occurred became insane.

The highest temperature noted was 110° F. The case in which this degree was reached terminated fatally.

The respirations are usually hurried and oppressed. The pulse may or may not indicate exhaustion. It may be natural, as occurred in a laborer, who at the time of admission had a normal temperature of the body, but who was still unconscious and had contracted pupils. He regained consciousness toward evening, but remained in the hospital three days suffering with tremors and vertigo. In some instances the pulse is strong, in others accelerated and feeble, and again it may be full but compressible.

Two patients had convulsions with opisthotonos, of which cases one died and one recovered. Chloroform arrested the eclampsia in both instances.

Semen is occasionally involuntarily discharged. One of the women who was admitted in an unconscious condition, miscarried and died on the day of her entrance.

In fine, we encounter various grades of sunstroke. It may occur as a state of syncope, similar to that induced by confinement in a close and warm apartment, and such cases are to be treated as ordinary fainting fits. Again, in more typical instances, the temperature of the body is elevated, and the patient is thrown into a state of unconsciousness from which, in the course of a few moments or of a few hours, he may be aroused and rapidly convalesce, or, on the contrary, may pass into a profound collapse beyond resuscitation. The last condition mentioned may possibly be present from the inception of the attack. Per contra, a patient may be quite hot, and with a pulse indicative of strength. These are cases in which it is difficult to decide whether the malady demanding attention is insolation or cerebral apoplexy. It appears to me that the diseases may be concurrent, and that the former may excite the latter.

In is impossible to give an average mortality for the disease. If those stricken are either intemperate, or broken down in constitution, or aged, or ill at the time of attack, the number of recoveries may be small. If patients are carried a long distance to be placed under medical care, valuable time is lost, and probably many lives have

thereby been lost, irrespective of any injury sustained during the transportation.

Dr. Joseph Jones states that the mortality among the prisoners at Andersonville in 1864 was 100 per cent., and that an almost similar fatality is reported by Sir Charles Napier at Nassurpoor in 1843. Aitken informs us that Barclay gives a death-rate of 42 per cent; Butler, of 43 per cent; and Dr. Swift in 1853, in this hospital, of 50 per cent. During the last three years in this institution the mortality has been about 34 per cent.

We cannot expect, however, to derive from such statistics any very practical information. Slight and grave cases are apt to be grouped together, and no distinctive attention is paid to the constitutional peculiarities of the individual at the time of attack. In deciding on the relative merits of different methods of treatment, we should compare cases which are differently managed, but which have similarities both in the ages and conditions of the patients, and in the gravity of the disease.

The *sequelæ* of sunstroke, as they have been observed here during the time before specified, have been as follows: In one case, chorea manifested itself, but was relieved in the course of nineteen days. In another the patient was insane for nearly two weeks. Another patient also became insane, and was returned to his family in this condition after remaining thirteen days in the hospital. Another, who was admitted with sunstroke July 16th, became crazy, and so remained until September, on the 25th of which month he was discharged cured. These occurrences were in the males only. Occasionally, after being aroused from a state of unconsciousness, patients become restless and delirious as in delirium tremens. This condition is transient, however, and after resting for a day or so they convalesce. Dr. Cock has observed the efficacy of the bromide of potassium in such cases.

As regards the post-mortem appearances in the disease under consideration, I can say but little as relating to the cases which have recently been treated here. In three only were autopsies made; congestion of the brain and lungs was observed in two of these, and in the remaining case the lungs were congested; the brain was not examined.

I come now to speak of the *treatment* of sunstroke. In speaking of the therapeutics I must recall the ordinary varieties of the disorder. The milder form, or that of simple syncope, is to be treated, as has been before stated, like cases of faintness; the graver form of syncope, or that of sudden and profound collapse, requires the immediate exhibition of restoratives. The nervous system has been overwhelmed, and vital action has almost ceased. The means suited to relieve such a condition are obvious.

We will consider the treatment of a more typical case. What indications are there to guide in its management? Under ordinary circumstances man maintains a temperature of about 98° F. If the weather is extremely cold, and if, by reason of improper food, raiment, or shelter, he is unable to generate and maintain the proper amount of heat, his body becomes cooled, and a fall in temperature of a few degrees makes him lethargic. When in this condition he is readily frozen to death.

Now what occasionally happens in our midst during the intensely warm weather? The same vital action is generating in man a uniform warmth. Unsuitable aliment and clothing, conjoined with exposure to an unusually heated atmosphere and to other unfavourable conditions, favor an undue accumulation of heat in the body. The individual falls insensible, the thermometer generally indicating that his temperature is above the normal standard.

In pyrexial disorders, when the temperature is high, we endeavour to lesson its intensity by bathing the forehead and by the internal administration of water and refrigerant draughts. Such means are grateful to and are desired by invalids.

Patients in the condition before indicated are, as we have said, overheated, and it seems rational to attempt to reduce their temperature. They are insensible and cannot swallow cooling drinks, and we should therefore apply cold to the head, or, what is better, to the arms, and further even to the neck and chest, and thus expose a larger surface in which the blood can be tempered.

If the case is an extreme one, and the temperature is very high, it may be well to strip off all the clothing and sponge the entire body with cold water, or to use the sudden cold douche; and if these means are insufficient to cool the patient and to rouse him, it may be necessary to apply ice to the head and axillæ, and to rub the trunk and extremities with the same material.

The use of ice in such cases was introduced into this hospital in 1857, by Dr. B. Darrach, at that time Resident Physician. In the American Journal of the Medical Sciences for Jan. 1859, he published a report of four cases treated in this manner; three recovered and one died. In the 53 cases to which I have alluded ice to the entire body has scarcely been employed. It has frequently been applied to the head, but for general cooling it is doubtless safer to rely upon sponging and the douche.

It should constantly be borne in mind that cold is a most powerful remedy. These patients have a tendency to collapse, and if intense cold is unnecessarily employed, it may hasten such an unfortunate condition.

Be careful, therefore, to suit the degree of the cooling process to the gravity and condition of the patient, and carefully watching the

effect of treatment, cease the applications at the earliest practicable moment. Resort is not to be had to the ice frictions until it is found that cool sponging or the douche have failed to reduce the temperature and to revive to partial consciousness.

Some patients come into our hands while in a state of collapse, being cadaverous in color and temperature. It would obviously be improper to employ such treatment in these cases ; they have passed the stage in which refrigerant means are indicated, and now require artificial heat, sinapisms, warm frictions, and stimulating enemata to restore them.

In many cases in which the cooling process is applied, we find that the temperature of the body has diminished, the respirations become more natural, the pulse less frequent, and that consciousness has returned. This favorable condition may occur in a few moments or may not be reached for several hours, during which time, however, the harsher method of treatment is not to be continually applied, but the gentler partial applications.

In some instances the temperature falls, but there is imperfect consciousness and delirium—such patients are to be carefully dried, placed comfortably in bed, and stimulating enemata exhibited, while the head can be kept cool if extraordinarily heated. As the lungs are generally early congested, it is desirable to place sinapisms on the extremities and chest, or upon the latter dry cups may be employed. By thus favoring the peripheric circulation we lessen the liabilities to pulmonary and to other centric engorgements.

Dr. Beatson, surgeon in the Indian service, has encountered sunstroke among the troops under his charge, and gives the following concise directions in reference to the immediate treatment : " Unfasten as quickly as possible the man's dress and accoutrements, to expose the neck and chest, get him under the shade of a bush, raise his head a little, and commence the affusion of cold water from a sheepskin bag, continuing the affusion at intervals over the head chest, and epigastrium, until consciousness and the power of swallowing return. When this takes place the affusion may be stopped and a stimulant mixture given occasionally in small doses."

In regard to the use of stimulants, I would remark that the same caution must be taken in prescribing them as in ordering cold applications. As soon as the patient can swallow, water can be allowed. If the pulse is frequent and feeble, stimulants are to be given, regulating the quantity by the effect produced. I have already spoken of the condition of the circulation in the malady under consideration. In administering the alcoholic and diffusible restoratives, be governed by the force and frequency of the pulse. Their inconsiderate exhibition will prove as injurious as their judicious employment will prove salutary.

To illustrate the promptness with which patients can be restored, it may be stated that eleven of the cases, to which allusion has before been made as having been admitted here in an unconscious condition or nearly so, were discharged relieved on the same day; four on the second day; four on the third day; three on the fourth day, &c.

Such patients, on being discharged, should be advised to avoid as far as possible physical and mental labor, and to avoid exposure to the sun for some days after their convalescence, and should be cautioned to give heed to these points for some time after their health has been restored. Inattention to these precautions may induce morbid nervous phenomena, from which relief may never be obtained.

A word in regard to the *prevention* of sunstroke. Fortunately there are but a few days in the year in which we are liable to be overcome by the heat. During extraordinarily warm weather, it is especially desirable to avoid all enervating influences. We are, as it were, suddenly transported to the tropics, and are unacclimated. The pursuits of life are not materially intermitted, and attention to usual duties may provoke the disorder. The disease is by no means confined to the laboring classes, though it is more common among them.

As diaphoresis is generally profuse in warm weather, so there is a corresponding thirst. It seems proper to assuage such natural craving by cool water in suitable quantities. The excessive use of cold or iced water has been condemned, and has been regarded by some as a cause of sunstroke. We have all experienced more or less inconvenience from drinking such draughts when heated. Dr. Swift in analyzing the causes of the sixty cases of insolation occurring here in 1853, came to the conclusion that drinking cold water hastened the development of the disease. He cited the case of a sailor who, having been at work in the sun, drank freely from a bucket of hydrant water, and after plunging his head into it, immediately fell insensible. It is not stated which form of sunstroke was thus excited. It may have been that of syncope. The system, however, should not be allowed to suffer for want of water, for abstemiousness I should infer would induce the disease. Water is to be taken that it may perform its ordinary office, in this instance, particularly, that it may moderately temper the blood and be evaporated from the nostrils, air-passages, and skin, and thus gradually cool the body. It does not, however, seem to me desirable to induce sudden shocks of the system by frequently drinking very cold beverages in large quantities. There may possibly be febrile reactions in the system after the chills induced by such draughts.

There is a professional as well as popular impression that the excessive use of very cold water will sometimes induce fatal results;

and while there is any room for doubt on the question, is it not the part of prudence, at least, to abstain from such excess? A consideration of the immediate effects of cold water upon the system is a topic worthy of extended observation, but upon which my present limits will not allow me to enlarge.

Our ability to avoid disease should not ordinarily depend on the use of alcoholic stimulants. Intemperate habits enervate, and an unaccustomed and unnecessary temporary excitation at the time may be injurious, or may be followed by a depression of the vital powers. There are doubtless conditions of the body in which cordials prove salutary; such cordials enabling an enfeebled body to resist extremes either of heat or of cold. But I confidently believe that the majority of people should avoid stimulants, and that they would derive advantage during the summer by using chiefly as a beverage, good water, which at times may be acidulated and sweetened. This remark particularly relates to those who are in the enjoyment of ordinary health, and who are still in the prime of life.

You are doubtless acquainted with the experiments of Franklin, Davy, Rumford, Coulier and others, in regard to the conduction, radiation, and absorption of caloric. The scientific facts established by these observers should guide us in the selection of the color and of the fabric of our clothing. There are few of our inhabitants so poor that they cannot be suitably attired. Our laborers could readily wear a cheap white or light colored garment over the dark *red* and *blue* shirts in which they so usually toil, and to which they are predisposed, by reason, I believe, of some fancied efficacy to be derived from the dye.

Dr. McDowall, Assist. Surg. of the Bombay Army, in writing in 1865 on the color of clothing as influencing the temperature, health, and comfort of the wearer, has given his personal experience. He says: "I well remember that when encamped on the shores of the Bosphorus, in Turkey, a little incident occurred which vividly impressed this physical fact on my memory and shoulders. The forenoon being bright and inviting, we (some other officers and myself) determined, Leander-like, to lave our limbs in the classic waters of the East, though not precisely at the same spot he patronized. The walk was pretty long and hot. We one by one took our coats off and carried them on our arms, both on going and coming from the bath. I wore a cherry-colored flannel shirt, and although all our shoulders were more or less burnt by exposure while in the water, I was literally scorched, and for some days suffered greatly from the slightest movement or friction of my coat. We all suffered in *exact proportion to the depth of shade of our flannel.* Now, in the jungle in the hottest weather and in the sun, I have often ridden, and do ride still, both for experiment and comfort in my shirt-sleeves; but that shirt is *white.* Any other colour

requires a proportioned thickness—nay, even padding, according to some."

No less attention should be paid to the covering of the head. Hats should be made of light-colored straw, or felt, and the latter should allow of free ventilation. Assist. Surg A. A. Woodhull, U. S. A., in his report to the Surgeon-General, in April 1868, upon the uniform and clothing of our soldiers, in referring to this subject, has said : " but, whatever covering is worn, it must be light in color, and be raised from the crown, to save the soldier from the disastrous effects of direct solar heat and confined hot air.—*N. Y. Medical Record.*

Chemical Dance: Instantaneous Apparition of Aniline Colours.

Under this title, a somewhat verbose, but after all, elegantly described curiosity, is related as follows :—Some few weeks ago Madam A. W. Hofmann gave a grand entertainment and ball to the large number of her eminent husband's pupils. In the ball-room were placed, on the table, a large number of bouquets of flowers (artificial of course), all snow-white, and close by, on the same table, a large number of pieces of beautifully white silk ribbon : at the other end of the room a fountain was arranged, throwing from narrow openings, jets of exquisitely perfumed Eau de Cologne. The bouquets were taken by the ladies, and the ribbons by the gentlemen ; and while waltzing together and thus arriving at the end of the room where the fountain played, the ladies holding their bouquets to be sprinkled over with the perfume beheld the white flowers become suddenly beautifully red, violet, blue, yellow and green coloured, while the ribbons carried by the gentlemen assumed, under the same influence, similar colours. The secret of this trick is simply that the objects alluded to had been very gently dusted over with the dry powders of variously prepared aniline colours, and on becoming moistened by the Eau de Cologne (alcohol), these powders became dissolved, and imparted colours to the objects.—*Chemical News.*

MEDICAL INTELLIGENCE.

(General Orders by the Governor in Council.)

Officers—Family Remittances.

G. O. G. No. 334 of 19th October 1869.—The following letter from the Government of India, to the Controller of Military Accounts Bengal, dated 1st October 1869, No. 51, is published, in continuation of G. O. G. No. 193, dated 19th May 1868.

In reply to your letter No. 889F, dated 20th August 1869, enquiring whether Officers may be allowed to make remittances to England through the Government Treasuries for the benefit of their adopted or step-children, I am directed to acquaint you that step-children may be considered to come under the term children, and remittances made through the Government Treasuries for their benefit.

2. As regards *adopted* children, a reference will be made to the Secretary of State.

Officers—Furlough on P. A.—Under Regulations of 1868.

G. O. G. No. 348 of 19th October 1869.—The following extract from General Orders by the Government of India is republished :—

Simla, the 28th September 1869.

No. 996 of 1869.—With a view to regulating the grant of furlough under the Regulations of 1868, as published in G. O. G. No. 1064,* dated 10th November 1868, the Right Honorable the Governor General in Council is pleased to direct that Officers obtaining furlough on private affairs are to understand that the grant of the furlough only holds good for three months from the date of the General Order notifying it. This period of three months is inclusive of the thirty days' preparatory leave allowed to reach the port of embarkation.

In the case of an Officer not embarking within the prescribed period, the order granting it will cease to have effect.

* Madras G. O. G. 1st December 1868, No. 434.

Officers' Staff Allowances—Appointments.

G. O. G. No. 367 of 9th November 1869.—The following* resolution by the Government of India in the Financial Department, dated 7th January 1869, No. 160, is published in General Orders, in supersession of G. O. G. 13th March 1866, No. 100.

* Published at page 179 of the Fort St. George Gazette, 2nd February 1869.

"In modification of previous orders on the subject, the Governor General in Council is pleased to rule that, when an Officer's leave or time for joining an appointment to which no substitute or acting Officer has been appointed, expires on a holiday, or any day which falls within a recess or a holiday of more than one day's duration, and takes charge of his duties on the forenoon of the first working day following such recess or holiday, he shall be treated in regard to his allowances as if he had taken charge on the day on which his leave expired."

Subordinate Medical Department—Family Remittances.

G. O G. No. 369 of 9th November 1869.—It is hereby notified that the Government of India have granted to Members of the Subordinate Medical Department, the privilege of making Family Remittances to England to the extent specified below :—

	£ Per annum.
Honorary Assistant-Surgeon.....	60
Senior Apothecary.....	40
Apothecary, 1st and 2nd Class.....	30
Assistant Apothecary, 1st and 2nd Class...	20

Military Officers in Civil Employ—Preparatory Leave—Allowances.

Financial Department—Leave and Allowances—Simla, the 26th October 1869.

No. 4252.—Read the undermentioned papers :—

Order of this Department, No. 3205, dated the 22nd instant, regarding the allowances of Military Officers in staff employ during absence on preparatory leave.

Resolution No. 1131,* passed in this Department on the 15th June 1869, regarding subsidiary leave to Military Officers in civil employ.

Communication from the Public Works Department, No. 1460 E, dated the 9th ultimo, objecting to the last mentioned order.

RESOLUTION.—The resolution of the 15th June 1869 applies to Military Officers in civil employ on consolidated salaries. Military Officers in civil employ on staff salaries will draw allowances during preparatory leave under the order No. 3205† of the 22nd October 1868.

ORDER.—Ordered, that the foregoing resolution be published in the *Gazette of India,* and communicated to the other Departments of the Government of India, the Local Governments, the Comptroller-General of Accounts, the Accountants-General and Deputy Accountants-General in independent charge.

* Madras G. O. G. 6th July 1869, No. 243.

† Madras G. O. G. 10th November 1868, No. 413.

Officers—Passages to England—Troop Ships, &c.

G. O. G. No. 390 of 23rd November 1869.—The following extracts from General Orders by the Government of India, are republished :—

All Officers serving in the Bengal and Madras, as well as Bombay, Presidencies, who may be entitled to a free passage, or Officers ordered to England on duty, or on medical certificate, during the Troopship Season, viz, between the 1st October and 1st March, who may be entitled to a passage at the expense of the State are to proceed to Bombay for transport in one of her Majesty's Troop Ships.

The only circumstances under which such Officers will hereafter, between these dates, be permitted to proceed to England otherwise than by Her Majesty's Troop Ships, are—

1st,—When ordered to accompany troops round the Cape ;

2ndly,—when a Medical certificate may declare a passage overland to be positively dangerous to health, and a long sea voyage essentially necessary ;

3rdly,—when a Presidency Medical Board certificate may, in like manner, declare that an immediate change to England is urgently necessary, and that the case will not admit of delay until a passage in one of the Troop Ships can be provided ;

4thly,—when suffering or recovering from a disease of a contagious nature which a Presidency Medical Board certificate may declare as not admissible on board a Troop Ship ;

5thly,—when the Officer Commanding at Bombay certifies that a passage cannot be provided in any of her Majesty's Troop Ships during the current season, and that the officer's services are not available for duty on other vessels taken up for the conveyance of troops to England.

Officers thus proceeding to Bombay in view of being provided with a passage in one of Her Majesty's Troop Ships will be allowed a free passage by rail for themselves and for their families.

This order cancels G. G. O. No. 926,* dated 26th September 1867, and in future, Officers who may be allowed to embark where they please under the authority of medical opinion, as laid down in paragraph 2, or who may go home on duty at seasons of the year when Troop Ships do not ply, will be allowed, in lieu of the rates marginally noted, the actual cost of a single passage to England by ship or steamer, the same to be drawn in a contingent bill accompanied by Ship Agent's acknowledgment that necessary accommodation has been secured; a free passage by rail for themselves and their families to the port of embarkation will also be allowed.—(G. O. G. G. No. 1109 of 1869)

For a Field Officer...	Rs. 1,700
,, Captain	,, 1,400
,, Subaltern.....	,, 1,200

* Madras G. O. G. 11th October 1867, *p.* 432.

Native Medical Subordinates—Travelling.

G.O.G. No. 1123 of 1869.—In supersession of existing orders, His Excellency the Governor-General in Council is pleased to direct that in future Native Doctors or Hospital Assistants of all classes, when ordered to proceed from one station to another, or to join their appointments, on admission into the service, be allowed, in ordinary cases, three days after receiving final orders to prepare for their journey. But when their services are urgently required at any station, they should start within 24 hours. Where no rail or steam communications exist, the journey should be performed at the rate of 15 miles a day, halting one or two days on the road if necessary. When proceeding by rail, the rate of travelling is to be regulated by the time table of the several Railway Companies.

Native Medical Subordinates infringing these rules and failling to submit a satisfactory explanation of the delay, will be considered absent without leave, and liable to forfeiture of pay for as many days as they may overstay the time allowed.

Public Officers in British Burmah—Leave on Medical Certificate.

Financial Department, Leave and Allowances, Fort William, the 17th November 1869.

G. O. G. G. No. 2468.—A case having been recently reported to this Department in which a public Officer in British Burmah before applying for leave on medical certificate proceeded to Madras to have the certificate countersigned by a Medical Board, the Governor-General in Council is pleased to notify for general information that when a public Officer in any Department in British Burmah applies for leave on medical certificate, the certificate countersigned by a Medical Board, of which the members will be the Deputy Inspector General of Hospitals in that province and the two next senior Medical Officers at Rangoon, will be sufficient authority for granting the leave permissible under the leave rules, and need not be countersigned by any higher medical authority.

2. The leave may be granted by the Chief Commissioner of British Burmah, and reported for confirmation to the Government of India.

Furlough Regulations of 1868.—Leave under Rule XI.

G. O. G. No. 400 of 7th December 1869.—The following extracts from General Orders by the Government of India, are republished :—

Fort William, the 25th November 1869.

No. 1165 of 1869.—Under instructions from the Right Hon'ble the Secretary of State for India, it is hereby notified that under no circumstances will leave under Rule XI of the Furlough Regulations of 1868 be granted in extension of furlough taken either on private affairs or medical certificate.

Dress.

G. O. G. No. 22 of 25th January 1870.—The following Circular issued by the His Excellency the Commander-in-Chief to Officers Commanding Divisions and Forces is published for the

information and guidance of Military Officers serving under the immediate orders of Government :—

Adjutant General's Office, Fort St. George,
22nd December 1869.

No. 4392.

MEMORANDUM.

Circular Memo. No. 3760, dated 21st November 1865, republished in Government Orders dated 23rd January 1866, granted permission to Officers to appear in plain clothes at the band and other places of public resort.

2. And a tacit extension of this indulgence has been recognized as regards private evening parties.

3. But it never was intended that Officers should appear in plain clothes at Balls, Concerts, Theatres, or at parties of any description where their Excellencies the Governor or Commander-in-Chief are likely to be present, and of this probability Officers should satisfy themselves.

4. On all such occasions Officers will invariably wear uniform.

Madras Medical Fund.

G. O. G. No. 32 of 1st February 1870.—The following extract from a Financial (Military Fund) Despatch from the Right Hon'ble the Secretary of State for India is published :—

Despatch dated 9th December 1869, *No.* 101.

Para. 1. I have considered in Council your Military Letter, dated 15th June 1869, No. 191, with which you forwarded a letter from the Secretary to the Madras Medical Fund, reporting the results of the vote of the subscribers on the proposition for the transfer of the assets, liabilities, and management of that Fund to Her Majesty's Government, under the guarantee referred to in the Act 29 Vict., Cap. 18, and in Financial Despatch dated 24th March 1865, No. 22.

2. The condition of transfer under which this vote was taken was that her Majesty's Government would guarantee to present incumbents on and subscribers to the Fund the pensions and allowances to which they are entitled according to the regulations now in force, and at the present rates of subscription ; but that such a guarantee was not to be construed as conveying to the Fund, or to any member of it, benefits which were not actually provided for in the regulations as at present in force.

3. On these conditions, Her Majesty's Government are prepared to accept the assets, liabilities, and management of the Madras Medical Fund, and I have fixed the 1st April 1870 as the date for the formal transfer of the Fund, both in India and in England.

4. The necessary instructions should accordingly be transmitted by the Trustees of the Fund to the Agents in this country for handing over the Fund records, &c., to the Director of Military Funds at this Office on the 1st April next, and for affording full information to that Officer respecting the past management of the Fund.

5. As it is not desirable that two separate Fund Departments should any longer exist at your Presidency, I request that you will take the necessary measures for incorporating the Office of the Madras Medical Fund with the present Government Fund Department.

6. Having reference, however, to the remarks of the Trustees of the Fund, in which the amalgamation of the Office Establishment of the Medical Fund with that of the Military is deprecated, on the ground of the dissimilarity which exists in the constitution of the two institutions, I am of opinion that, in the selection of the staff which will be required in the Government Fund Department for the future conduct of the business of the Medical Fund, the services of the persons at present employed in the Medical Fund Office should be retained to such an extent as may be necessary.

7. In communicating the decision of Her Majesty's Government to the Trustees of the Medical Fund, I request that you will inform them that the important points which have been brought to notice in the letter from the Secretary to the Fund, dated 19th May 1869, respecting the financial position and prospects of the annuity, sick allowance, and charity branches of the Fund, as well as the Report of the actuary, will receive my consideration in Council as soon as may be practicable after the formal transfer of the Fund to Her Majesty's Government.

Furlough Rules of 1868—Leave under Clause XI.

Under the orders of the Right Honorabie the Secretary of State for India, conveyed in Despatches Nos. 215 and 370 of 18th August and 14th December of 1869, respectively, it is notified that in future leave under Clause XI of the Furlough Rules of 1868 will not be extended by the Right Hon'ble the Secretary of State, except on medical certificate, in which case the whole of the leave will be considered as if taken under Clause XIV of those rules.—(G. O. G. G. No. 97 of 1870.)

House-Rent (Presidency)—Medical Subordinates.

G. O. G. No. 46 of 15th February 1870.—The Government of India have sanctioned the grant of an increase of 50 per cent. on the existing rate of house-rent to members of the Subordinate Medical Department, who serve at the Presidency Towns of Bengal, Madras and Bombay, but are not furnished with public quarters.

Hospital Assistants—Promotion, &c.—Extra Allowances.

The 1st February 1870.

With reference to paragraphs 23 and 36 of G. G. O. No. 550* of 5th June 1868, the Right Hon'ble the Governor-General of India in Council is pleased to direct the observance of the following rules regarding the future position and prospects of Native Medical Subordinates :—

1. Native Medical Subordinates placed at the disposal of Local Governments and Administrations may be employed by them at such places and such posts as may be considered desirable without any further reference to the Government of India or to the Governments of Madras and Bombay, as the case may be, by whom, however the first appointment of men to the several establishments, and their subsequent promotion therein, will continue to be made as heretofore.

2. All Native Doctors, Hospital Assistants, or equivalent grades now on the Medical Subordinate Establishment at any of the three Presidencies, who having passed the requisite examination at any of the Medical Colleges or recognized Institutions, have been admitted by Government into the service in either civil or military employ, and all those, who, having passed the prescribed local examinations, may have been admitted into the service in General Orders by the Commander-in-Chief, will be eligible for transfer to the establishment of Hospital Assistants, and will be graded as such, according, in the first instance, to their present standing, their further promotion being dependent on length of service and tested professional qualifications.

3. Other Native Doctors, including all in purely local or temporary employ, will continue to bear that designation, and their employment will be confined to subordinate civil duties. If in

* Madras G. O. G. 19th June 1868, No. 232.

future it be found necessary to employ such men temporarily in appointments to which staff pay is attached, they will be so employed on the same footing and under the same conditions as heretofore.

4. Native Doctors transferred to the Establishment of Hospital Assistants will receive the lower rate of pay prescribed in G. G. O. No. 550 of 5th June 1858, until it shall be certified in each case that the individual possesses the qualifications in English laid down in G. G. O. No. 945† of 7th October 1868, when the higher rate of pay granted in the former G. O. will be passed to him. Any allowance previously drawn for qualification in English will be considered as merged in the lower rate of grade pay now sanctioned for Hospital Assistants, but those at present drawing higher aggregate allowances will be secured from loss.

5. All future appointments to the grade of Hospital Assistants must be made from that of passed medical pupils, as provided in G. G. O. No. 550 of 5th June 1868, and all members of the establishment referred to in that order will be enlisted for, and will be liable to, military duty if required, although their ordinary employment may be purely civil.

6. Hospital Assistants in civil employ, when holding independent charges of peculiar importance and unusual responsibility, and Hospital Assistants, whether in civil or military employ, when the number of those constituting the charge amounts to more than 750 men, will be allowed an extra charge allowance in addition to the new scale of grade pay, but this indulgence should be carefully restricted to cases of the nature specified. As regards the exact amount of such allowances, and the precise nature of the charge that will entitle to it, general regulations will hereafter be laid down.

7. This order is applicable to all three Presidencies—(G. O. G. G. No. 125 of 1870.)

† Madras G. O. G. 27th October 1868, No. 404.

(General Orders by the Commander-in-Chief.)

Medical Department—Committees.

Adjutant General's Office, Head Quarters Cawnpore, 4th December 1869.

No. 337.

With the sanction of the Government, the word "Sanitary" is expunged from para. 7 of G. O. No. 289* of 1868, defining the signification of the term "Medical Board."

* Madras G. O. C. C. 17th October 1868, page 263.

* * * *

Dress—Warrant Officers.

No. 3.

The Government of India have approved of the following sword belts and sword knots being worn by all Warrant Officers (not holding Veteran or Honorary commissions,) and Non-commissioned Officers serving in departments :—

For Warrant Officers of the Ordnance Department, a belt of Royal Artillery pattern, but made of black Japan leather, and with plate having the words "Ordnance Department" embossed upon it.

* * * *

For Warrant Officers of the Medical Department, a similar belt with words "Medical Department" on plate.

* * *

Sword knots of approved pattern, those for Warrant Officers to be black Japan and those for Non-Commissioned Officers brown leather.

Officers—Arrival, &c. at Bombay.

G. O. C. C. No. 28 of 29th March 1870.—It having been brought to notice that the instructions contained in G. O. C. C. dated 2nd August 1869, No. 99, have been neglected by Officers of the Madras Army failing to report their "Arrivals" and "Departures" in the Books kept in the Brigade Office, Bombay, the Commander-in-Chief directs the particular attention of Officers of the Madras Army to the provisions of the above G. O.

Sanitary—Camp Equipage—Hospital Furniture and Stores.

G. O. C. C. No. 30 of 5th April 1870.—With the sanction of Government, the following General Order by His Excellency the Commander-in-Chief in India is republished :—

Adjutant General's Office, Head Quarters Calcutta, 14th December 1869.

* * * *

No. 348.

With a view to prevent the unnecessary destruction of Hospital Furniture, &c. in future, the Commander-in Chief, under instructions from Government, is pleased to invite the attention of Commanding as well as Medical Officers to the following General Orders on the subject :—

G. O. C. C. dated 17th May* 1865.—Directing that cots and punkah fringes, which have been used by Cholera or Small-pox patients, be subjected to the action of boiling water ; and whenever the bedding used by such patients can at once be subjected to the same process, that course should be adopted ; and the unnecessary destruction of Government property be thus avoided.

(*Madras G. O. C. C. 19th Dec. 1865, page 315.)

Tents used for Cholera Hospitals should also be thoroughly disinfected before undergoing the action of boiling water. They should be finally disposed of as directed in G. O. C. C. 14th March 1865—(Madras G. O. C. C. 19th December 1865, Page 315.)

G. O. C. C. dated 3rd July 1865†.—Laying down rules for the survey and disposal of Unserviceable Hospital Clothing, Bedding and other miscellaneous articles.

G. O. No. 2, dated 10th January 1868‡.—Warning Medical Officers of the pecuniary responsibility they incur in ordering the destruction of Hospital furniture which has been used by Cholera and Small-pox patients ; such a procedure being directly opposed to the rule published in G. O. C. C. of 17th May 1865.

† ‡ Republished below.

* * * *

Medical Department—Hospital Clothing.

Head Quarters Simla, 3rd July 1870.

* * * *

In supersession of all former orders on the subject, the following rules for the survey and disposal of Unserviceable Hospital Clothing, Bedding, and Miscellanies are published.

I. All articles of the above descriptions considered unserviceable by Medical Officers are to be presented in a clean washed state to Committees of Survey, in view to being formally condemned. Committees should have the articles counted, and their numbers entered in the proper column Repairable or Unserviceable, of the Form of Report. Care should be taken that in counting Clothing and Bedding, pieces are not reckoned as whole articles.

II. As a rule all articles condemned as unserviceable should be made over to the Commissariat Department, but Committees may exercise a discretion in ordering to be destroyed such Miscellanies as from wear and tear are of no value, and such Clothing and Bedding as cannot by reason of their fabric or from their torn and tattered state, be used in cleaning Rifles. Committees should also clearly understand that they have the power to order condemned articles of Clothing (even fit to be used in cleaning Rifles) to be destroyed in special cases, such as the recent prevalence of any infectious disease or on other similar grounds. The manner in which the several articles have been dealt with should be noted in the Survey Report, a copy of which should be forwarded to the Principal Inspector General Medical Department.

III. Officers of the Commissariat Department should, if required, grant a detailed receipt for the articles and numbers made over to them.

IV. Miscellaneous articles should be sold by the Commissariat Department, and the proceeds credited to Government.

V. But cotton, woollen and flannel articles should be retained for issue to Corps for the purpose of cleaning Rifles.

VI. The supply to Corps for cleaning Rifles, should suffice to provide each Soldier annually with twenty pieces each 6 × 3 inches, in accordance with the custom at Home, as laid down in War Office Circular No. 678, dated 26th April 1861. The supply should include such proportion of cotton, flannel and woollen clothing as Regiments desire, so far as the quantity available will permit.

VII. The reports of Committees should be in the annexed forms.

Survey Report of a Committee ordered to assemble as per Brigade Order, dated————————issued by the Officer Commanding at————————to report upon Hospital Miscellanies of Her Majesty's————————Hospital.

Station————Date————

President————

Member————

Member————

Articles in Alphabetical order.	Repairable.	Unserviceable.	Remarks by the Committee.

Attending the Committee.

——— President.
——— Member.
——— Member.

Brigadier Commanding.

Survey Report of a Committee ordered to assemble as per Brigade Order, dated———issued by the Officer Commanding at———to report upon Hospital Clothing of Her Majesty's ———Hospital.

Station———Date———
President ———
Member ———
Member ———

Articles in Alphabetical order.	Repairable.	Unserviceable.	Remarks by the Committee.

Attending the Committee.

——— President.
——— Member.
——— Member.

Brigadier Commanding.

CORRESPONDENCE.

The Johnstone Medal.

To The Editor of the Madras Medical Journal.

Sir,—With reference to Mr. Wilkins' letter on the Johnstone Gold Medal that appeared in the last number of your Journal, let me say that I was in error in stating that no Senior Department student ever took the medal. The error arose from my not being acquainted with the earlier records of the College; but I think this does not change the aspect of the question, "Why is the medal held out to both departments and given only to one?" when we come to see that during the past twenty years the medal was only once awarded to the Senior Department.

Throughout Mr. Wilkins' letter there pervades a tone of prejudice, which at once becomes evident to any one who is acquainted with the abilities of the two departments. I will not question the justice of the authorities in the adjudgment of the medal either in the session that has just closed, or in former sessions, until the following question is answered, "How are the merits of the "Senior and Second Department students compared, when the for-"mer joins the latter *only in the classes of Medicine, Ophthalmology, "and Hygiene*?" The students of the Second Department, whom the senior student joins in all the other classes, leave College before his course is completed. Are his merits in these classes compared with the merits gained in similar classes by students whom he never joined, or are only his merits in Medicine, Hygiene and Ophthalmology taken into account? For we can only arrive at a right estimation of the merits of two students by a comparison of the merits gained by them together in the same classes; and not in *some* classes only, but in *all* the classes they pass through while in College.

Here I would stop, but I have to refute a sweeping and unfounded charge made by Mr. Wilkins against the reputation of the Senior Department. He has been too rash in his judgments of that department, and rather liberal in the expression of his "impressions," which, let me remind him, once were instrumental in placing him in not a very envied position. After reviewing the many years in which the senior students lost the medal, and assigning as the cause of their failure "insufficient merit," Mr. Wilkins bursts out in the following words: "It "seems strange that, notwithstanding the better training prior to "joining College, the long period they are under instruction at the "institution, and the comparatively few subjects they study "during certain years, that Senior Department students are, as "a rule, inferior in attainments to not a few Second Department "students." I greatly wonder how Mr. Wilkins, acquainted as he is with the details of the College, could have, in the face of stubborn

facts, brought himself to give expression to a *private* opinion, such as the above, in a *public* Journal—an opinion which he cannot substantiate by facts. I reverse the statement made by Mr. Wilkins, and say "that Senior Department students are, *as a rule*, "superior in attainments to the Second Department students." This statement I uphold by the following facts:—

In Session 1868-69, 11 Senior Department students competed with 57 Second Department students for 20 prizes, of which only 17 could have been obtained by the former department, as only one fourth year senior student joined the third year Second Department students in three subjects, for which six prizes were offered. Out of these 17 prizes ten were carried away by the Senior Department. Thus, this year the "lion's share" of the prizes fell to the senior department.

In Session 1869-70, which has just closed, 13 Senior Department students competed with 62 Second Department students for 19 prizes, out of which 12 were gained by Senior Department students. One fifth year senior student, on account of illness for three months, could not compete for the prizes in Medicine, Clinical Medicine, and Ophthalmology. In this session, too, the "lion's share" of the prizes fell to the Senior Department. I would gladly give the results of former years, but I have not the reports of the College for those years with me.

Do not the results of the past two years, then, overthrow Mr. Wilkins' statement and substantiate mine? Lastly, let me state that the Professors, in their reports, speak more highly of Senior than Second Department students, and their opinions carry more weight, and are more valuable than Mr. Wilkins', as they come from gentlemen who can in no way be prejudiced against either department.

MEDICUS.

TO CORRESPONDENTS.

DR. SHORTT.—*Received with thanks.*

MAJOR BEDDOME.—*Too late for this number. In our next with thanks.*

PROBE-POINTED BISTOURY'S *Enclosure is not suited to our pages.*

MR. B. L. XAVIER.—*Thanks. In our next.*

BOOKS, &c. RECEIVED.

Balfour's Statistics of Cholera.
Náráyan Dági on Ailanthus Excelsa.
Journal of Cutaneous Medicine, *June.*
Indian Medical Gazette, *July.*
Journal Des Connaissances Médicales, *to 30th June.*

THE MADRAS

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No. IX.—SEPTEMBER, 1870.

ORIGINAL ESSAYS.

ART. XIII.—*Descriptions of new Reptiles from the Madras Presidency.* By Major R. H. BEDDOME, Conservator of Forests.

(In continuation of Article II. Vol. I.)

Cercaspis Travancoricus. (Bedd.) Rostral deeply grooved below, not much produced back between the anterior frontals, anterior frontals small, not half the size of the posterior, vertical shield-shaped three-sided pointed behind, occipitals longer than the vertical pointed behind, loreal much longer than high, preocular reaching the surface of the head and touching the post-frontal and vertical, eight upper labials, 3rd, 4th and 5th enter the orbit, two post oculars, scales in 17 rows quite smooth, with small apical groove, ventrals angled at the sides, 66 entire subcaudals, or a few of them double towards the apex of the tail; total length 15 inches, of which the tail is $2\frac{3}{4}$; color black, with white transverse bars, belly uniform whitish, very like Lycodon striatus, but with entire subcaudals.

Travancore hills, Attraymallay, 5,000 feet elevation—under stones, rare; it has quite the coloration of Lycodon striatus. Two specimens were found, one of which had all

the subcaudals single, and the other had the first 38 entire, and the 28 small ones towards the apex of the tail double.

Melanophidium bilineatum. (Bedd.) Fifteen rows of smooth scales, tail compressed (as in Plectrurus) ending in a single point, head rather elongate, snout rounded, mouth large, nasals forming a suture behind the rostral, frontals large produced back to a level with the eye over the ocular shield, eye very small, no supra-ocular, a median groove, belly and back uniform bluish black, very nacreous and assuming all the colors of the rainbow in the sun, a broad yellow streak from the snout to the tail on each side, which occupies the whole of the second scale from the abdominals and half the first and third scales, subcaudals 14 pair, total length eight inches, as thick as a goose's quill.

This very lovely species was found near the summit of the Peria peak in the Wynaad, elevation 5,000 feet, and also at a similar elevation on the Tirrhioot peak, both under stones.

Silybura Canarica. (Bedd.) Scales in 15 rows, anal large bifid, subcaudals 12, abdominals about 154, snout obtuse, rostral triangular behind produced back between the nasals, nasals forming a suture behind the rostral, vertical four-sided very pointed behind, eye rather large in front of a large ocular shield, pupil round, caudal disk laterally compressed (as in Plectrurus), each scale with 3-5 inconspicuous keels and ending in two sharp spines one above the other. Very variable in its marking, but generally of a brownish color, with only the anterior portion of the trunk variously streaked, blotched and dotted with yellow, tail always yellow beneath. Length of largest specimen 16 inches, girth of trunk 1½ inches. This species has only 15 rows of scales as in *macrolepis*, but its caudal disk differs from that species, and it must be arranged in a different section, as I look upon all the species with a flat caudal disk like Silybura Shortii as sectionally (if not specifically) distinct from the species with the tail of Plectrurus.

South Canara, very common on the top of the Kudra Mukh, a mountain 6,000 feet high, under stones and in heaps of rubbish. No Uropeltidæ were met with on the Ghats north of the Kudra Mukh, though most careful search was made every day under stones. On the eastern coast, the most northern limit at which I have detected this tribe, is the Golcondah hills near Vizagapatam, where, in a fort-

night's search, I found a single specimen of Silybura Elliottii, and Silybura Beddomii is scarce on the Nullay Mallays near Kurnool. Uropeltidæ or rough-tails, are, I believe, confined to the mountains or the forests very near their base. I have occasionally found Rhinophis sanguineus in the plains of Malabar, but then always in the dense forests not far from the Ghats, and Silybura Elliottii and Beddomii are-are found on the table-land of Mysore, elevation about 3,000 feet; all the other species have only occurred to me on the mountains, and I believe Dr. Gunther is in error in giving the neighbourhood of Madras as a locality for Silybura Elliottii.

Pseudophiops monticola. (Bedd.) Nostrils lateral in the lower part of a large nasal shield, with two small post nasals, the lower one the larger, but both together not equalling the nasal, loreal region concave, loreals two, the posterior much the larger and separated from the eye by several small shields; nine upper labials, the fifth very large and under the eye, eight lower labials all nearly equal; medial lower labial very large, six pair of chin shields (exactly the same as in P. Jerdonii), the three first pair forming sutures the sixth very small; anterior frontals one small pair about the size of the nasal or rarely three shields, the intermediate one being larger than the two lateral; posterior frontals three, the intermediate one being the smallest, rarely only two, vertical superciliaries and occipitals as in P. Jerdonii, but the shield between the post occipitals is rather larger than in that species, and all the head shields are longitudinally plicated as in P. Jerdonii, but more warty; femoral pores 10 on each side, none in the preanal region; a single large preanal shield, with a second one behind it about half its size (as in P. Jerdonii); scales of the back in 25-26 rows, acutely keeled except in the two rows adjoining the abdominal scales; keels more prominent towards and on the tail, and forming continuous raised ridges; abdominal scales large and smooth in six rows. Color uniform brownish above, with sometimes a paler indistinct streak along each side of the back from the post occipitals to the tail, and a more prominent whitish streak along each side from the ear to the hind leg; belly uniform whitish.

On the summit of the Brumagherries in Wynaad in grassy places, elevation 5,000 feet, common, and in the plains in South Canara near Sooleay, very rare; the single specimen

found in the plains differed from the mountain form in having no intermediate shield between the post frontal, whereas it is present in all the specimens collected on the Brumagherries; but these latter have some of them only two anterior frontals, whereas others have three. This species is not so prettily colored as its congener P. Jerdonii, which is of a more reddish brown, has the four white streaks very distinct, and numerous black spots on the back and sides. The latter species is very common in the plains near the Tumbudra river north of Adoni. I have also found it at Coimbatore, and Dr. Jerdon found it at Mhow, and he has lately sent it me from the Punjab under the name of Ophiops bivittata, but he changes this name in his "Notes on Indian Herpetology" (published in the Asiatic Society's Journal) to Pseudophis Theobaldi, and states that it differs from P. Jerdonii in the post frontals being separated by a small shield, and in the third pair of chin shields forming a suture instead of being separated by small scales; but in my very numerous specimens of P. Jerdonii, I find both these differences very general. Dr. Jerdon has established the genus Pseudophiops for these Indian species as they differ in having the rostral in a single plate followed by two nasals, instead of between two plates followed by three nasals as in the typical Ophiops; he proposes the name of *Beddomii* for this species, but I had already distributed it under the name of Monticola.

Fam. Sepsidæ. SEPSOPHIS. *New genus.*

Sepsophis punctatus. (Bedd.) Muzzle rounded, rostral large square behind, nostril in the front of a minute shield in a notch at the hinder side of the rostral plate, and just over the first labial, supra-nasals one large pair contiguous, anterior frontal large, pointed in front and square behind, post-frontal six-sided, vertical similar to the post-frontal, anterior occipitals three, post-occipitals two, very much longer than broad, five large plates over the eye, loreals two, region not concave; six upper labials, fourth under the eye; five lower labials; eye small, lower eye-lid transparent; no external ears; median lower labial large, square behind; first chin shield single, followed by three pair, the first of which form a suture together; scales of the back, sides and belly all equal and similar, smooth, imbricate and rounded behind, in 22 transverse series round the trunk, and thirteen round the tail; two large anal plates; body and tail of nearly equal

thickness throughout, the end of the tail being nearly as thick as the head, and ending with a single rounded shield (perhaps injured and grown over); no external limbs, but a minute fin-like pointed process about half a line long let into a groove at the position where the fore-legs should be, and a depression in the body on each side of the vent, which is occupied by several very small scales; total length nearly six inches, of which the tail is $1\frac{3}{4}$; circumference $\frac{1}{8}$ths of an inch; above buff with two regular rows of large black spots on the anterior portion of the trunk, eventually running into two regular lines of minute dots, which become four lines towards the end of the tail; sides very black, belly grayish, with black spots on the scales.

A single specimen of this very curious limbless lizard was found at Darakondah on the Golcondah hills near Vizagapatam (elevation 3,000 feet), under a stone: a long search did not reward me with a duplicate example.

Gymnodactylus speciosus. (Bedd.) Of stout form, body finely granular, all the scales being of the same size; scales of the tail larger, of a reddish brown color, with three broad white transverse bands, one across the neck, one across the middle of the back, and one just in front of the hind legs, each being a quarter inch broad, or half the width of the interspaces of ground color, and edged with black; crown of the head white, with six reddish brown blotches, three across the occipital region, the centre one of which is elongated, two across the vertical region, and one on the frontal region; belly uniform whitish, chin beneath blotched or maculated; tail with four transverse white black-edged bands as on the body; femoral or preanal pores none; subcaudals not enlarged; rostral large, grooved behind with two small plates behind it; pupil erect, ✠ shaped; upper labials eight, two last very small; lower labials seven, medial lower labial large, pointed behind, first pair of chin shields rather large, forming a suture behind the medial lower labial, second pair about half the size, total length $3\frac{1}{4}$ inches.

In a tope near Erode, very rare.

Gymnodactylus Collegalensis. (Bedd.) In every respect as in Gymnodactylus speciosus, but with a very different coloration; ground color, pale grayish, with four dark brown 8-shaped marks edged with white across the body, and a transverse band of large spots between each marking;

head with eight irregular dark brown blotches on a light ground; tail with about six 8-shaped transverse blotches, becoming indistinct towards the tip.

Under stones on the lower slopes of the Balarangams in dry forests near Yellundur.

These two lizards agree in every respect, except in coloration, which, however, is very different; they are both most beautifully marked species, and must be very rare. Only a single specimen of each has been obtained, and considerable search and expense has not rewarded me with a duplicate of either.

Gymnodactylus maculatus. (Bedd.) Of stout form, body and tail rather finely granular, some of the scales of the body being rather enlarged, but those of the tail all uniform, no spines, subcaudals enlarged; of a brown color, with regular transverse bands of oblong dark colored spots across the body, and bands across the tail; rostral large grooved behind, with two small plates behind it; seven upper labials, the seventh very minute; nine lower labials, the last 3-4 very minute; lower medial labial large triangularly pointed behind; chin shields 2-3 small pair not forming sutures; pupil round; femoral pores eight on each thigh in two continuous lines, no pores or enlarged scales on the preanal region; toes very long, slender and laterally compressed; total length four inches, of which the tail is 2¼.

At Sholakal, the foot of the Sispara ghat, under logs and stones.

Gymnodactylus nebulosus. (Bedd.) A very small species of rather stout form, muzzle short, rounded, body and tail finely granular, many of the scales on the former being enlarged, scales on the latter uniform; subcaudals not enlarged; no spines; no femoral or preanal pores; of a dull brown color, beautifully clouded with irregular dark blotches, which are edged with white. In some specimens the markings are almost obsolete, and in others they form transverse bands; rostral large, grooved behind followed by two small shields; upper labials nine, last two very small; lower labials 8-9, last 2-3 very small; medial lower labial not very large, pointed behind, first pair of chin shields large, and forming a suture behind it; pupil erect, ⊕ shaped; total length 2¼ inches.

Golcondah hills near Vizagapatam, under stones at 2,000-3,500 feet elevation, rare.

From the Anamallays, I have what I take to be the Euprepes (Tiliqua) macularius of Blyth, it is uniform bronzed olive green above, and white spotted on the sides of the body and tail, each scale 5-keeled, otherwise differing in no way from Euprepes rufescens. From the higher ranges of the Balarangams, I have a very beautiful Euprepes, it is bronzed olive green above with numerous black spots on the body, particularly on the posterior portion; sides white-dotted, each scale seven keeled, but differing in no other way from Euprepes rufescens. I cannot look upon either of these varieties as specifically distinct from Euprepes rufescens of Cantor, though they may both rank as varieties, in which case the species must be described as 3-7 keeled. The coloration of my numerous examples of the ordinary three-keeled form are much more varied than what is described by Gunther. In my Cabrita Jerdoni (described in the January number of this Journal), the nostrils are in the lower part of single shields, the pair of which meet and form a suture between the rostral and single anterior frontal; behind each nasal plate and in front of the anterior loreal are two very small postnasal plates, the posterior frontals have a very small intermediate shield. I add this additional description as this lizard is not a true Cabrita, and will form a new genus between Cabrita and Pseudophiops, which may be called Cabritopsis.

Eumeces Dussumierii. Forty longitudinal rows of scales, eight of which run along the back, 66 transverse series between the axils of the fore and hind legs, those immediately behind the fore legs being very small; belly uniform white; tail red, a black streak running from the axils of the fore legs to the axils of the hind legs; sides with a broad jet black streak, margined with white, commencing at the eye and becoming lost about the middle of the tail, the black color occupying the width of 4-4½ scales; back fulvous with two longitudinal series of black blotches, forming continuous lines on each side of the back; nasals lateral in a single rather square plate, followed by two loreals and one anteocular; anterior frontal or intra-nasal single, square in front, pointed behind; post-frontals one pair, square in front and pointed behind; vertical triangular in front, produced into a long point behind between the supra-oculars; supra-ocular region much swollen, and covered with four large plates, the first of which is equal in size to the other three; anterior occipitals two, the two together forming a triangle; post occipi-

tals two, posterior margin much broader than anterior; one intermediate shield; ears large, oval not denticulate, but the anterior margin scaly; some of the subcaudals enlarged; feet with warty excrescences, fourth toe a third longer than the third; upper labials seven, none of which enter the orbit, as there are small scales between them and the eye, sixth labial much the largest; seven lower labials, medial lower labial square behind, followed by a single broad chin shield, behind which again are four pair, the first only of which forms a suture; lower eyelid scaly; total length $5\frac{3}{4}$ inches, of which the tail is four.

This very beautiful species, which has been confounded by Dr. Gunther with Eumeces Indicus of Gray, is, I believe, the ? Lygosoma dussumierii of Dum and Bibr. I have lately found it in Malabar, at Nellicottah, between Nellumbur and the foot of the Carcoor ghat.

Cecilia Malabarica. Body short, total length $5\frac{1}{2}$ inches, as thick as a goose's quill, terminating in a pointed tail, which is prolonged to about $\frac{1}{7}$th of an inch beyond the vent; body and tail surrounded by 238 folds, almost every one of which meet under the belly; snout flattened and shelving downwards, subnasal grooves at the edge of the flattened snout below, but rather in front of the nasals.

Malabar—rare, a much smaller species than the common C. oxyura, and differing in its snout and the annular rings.

Epicrium carnosum. (Bedd.) Head very much depressed; eyes quite invisible; labial groove much nearer the nasal than the eye; point of tail quite rounded, not prolonged more than $\frac{1}{2}$ a line or a line beyond the vent; annular folds 120, quite continued round the body and belly throughout the whole length; total length seven inches, with a circumference about as thick as a crow's quill; of a uniform bright fleshy color when alive, fading to a reddish brown in spirits.

Peria peak, Wynaad, at an elevation of about 5,000 feet; under stones, rare.

I have lately found the beautiful Gymnodactylus Deccanensis of Gunther in South Canara, at Hospet (nearly sea level), and at the top of the Codachy Parwat (5,000 feet). The cross bars are a brilliant yellow, but turn white after the animal is put into spirits; it is evidently a very rare species, as during a tour of more than a month I only obtained two specimens. It has no femoral or preanal pores.

Art. XIV.—*Case of Acute Inversion of the Uterus.* By Asst. Apothecary B. L. Xavier, 14th M. N. I.

I was summoned to see a native female of the Bunt caste, residing at Bulmatta, belonging to the German Mission Society, who was, as I was informed, in a dangerous state after confinement.

The woman was about five and thirty years of age, and was confined of her seventh child, a healthy little boy, on the 27th June 1870, at 8 p. m., and was attended by an experienced midwife. From her statement I was given to understand the labor terminated naturally.

Five hours after confinement I saw the poor woman lying on her left side with her knees drawn to the abdomen moaning from pain, pulse rapid and small, skin cold, lips pale, voice low, constant vomiting; there was great loss of blood, she looked quite anxious and exhausted.

On examination I found no uterine tumour in the hypogastric region, and the uterus turned completely inside out beyond the os externum, forming a large globular tumour about the size of an infant's head, with a rough bleeding surface. With difficulty I succeeded in reducing the displaced organ, owing to the strangulation and consequent swelling of the inverted uterus.

The after treatment consisted in simple diet and rest. The woman is now quite well, and attends to her work.

Art. XV.—*Note on the Infection and Propagation of Measles.* By John Shortt, M. D., Surgeon, Superintendent General of Vaccination, Madras Presidency.

The propagation and progress of infectious disease will always prove of interest to the physician, more especially when its origin and dissemination can be ascertained pretty correctly. I therefore detail here the account of an epidemic of measles that showed itself at Yercaud about the middle of 1869, and how it attacked a whole family of nine children, ranging from 18 months to 17 years of age, but left the tenth and last born, an infant only a month

and a half old scatheless; and how on the return of the boys to school nearly three months after recovery, they infected their only school-fellow and chum.

The particulars are that some time in May 1869, a family came up to Yercaud from the plains, and early in June one of their children, a girl about five years old, was taken ill with the measles, from which it is evident that the disease was brought up from the plains, as nothing of the kind had then been heard of at Yercaud. The disease was mild there being no coryza or catarrhal symptoms present, beyond some fever, sore throat and the eruption itself. In the course of a few days the child was quite well. Adjoining the house occupied by this family was a small school in which there were only five pupils (boarders). Four of these boys were brothers and belonged to a family of ten, whilst the only other boy was a stranger. About the 15th of June the school closed for the midsummer vacation and the boys went home. The family of the four brothers was living seven miles distant from Yercaud, and, as already stated, on their return to their parents there were ten children in the house, including the four from school. I shall number them from one to ten respectively.

Early in July No. 3 (one of the boys from school) sickened with the measles. He was aged 14, and took the disease in a severe form. In the course of a few days No. 1, the eldest of the family, aged 17, and No. 2, aged 15½, sickened the same day. The next to take the disease were No. 4, a boy aged 13, No. 5, aged 8½, No. 6, aged seven, No. 7, aged 5½, No. 8, a girl aged three, and No. 9, a boy aged 18 months. These sickened successively and almost simultaneously, the disease being severe in some and mild in others, yet in no instance was active medical aid called for; attention to diet and confinement to bed being all that was needed: but, strange to say, whilst these nine children sickened, and the disease went the round of the family, the youngest, a baby girl, only a month and a half old, escaped the disease. She had a wet nurse or *Ummah*, and on the first appearance of the disease, at my suggestion, she was placed with the nurse in a small adjoining room, and all contact with the other children was cut off. Thus she appears to have escaped the disease, although living under the same roof; but it is still more singular that

when the four boys, Nos. 2, 3, 4 and 5, returned to school on the 9th August, they conveyed the contagion there and gave it to their only remaining schoolmate, nearly two months and a half after. This other boy sickened on the 29th October, and when I saw him on the 22nd of November he was quite ill of the measles, and yet the baby who lived in the house, and who was brought out from the prison-room long before the boys returned to school, never took ill but escaped the disease altogether. At the time the boys returned to school, there was no measles about the place as far as I could ascertain,—then how else could the other boy, the only one in school, take the disease? The boys were perfectly well in every respect as I examined them before they returned to school. Could the disease have been smuggled into the school in some of the boys clothes, &c.? This is possible, as the five boys occupied the same room, and it strikes me that that was the only way in which the disease was brought to the school in this instance. Most medical authorities agree in allowing a fortnight or three weeks for the incubation of measles, but here it was nearly three months since the recovery of the last of the sufferers had taken place, and yet, either through the person or the clothing, the disease was communicated. This is a lesson that should not be forgotten, and it teaches us how necessary it is to be cautious in admitting those who have suffered from infectious disease into other houses or establishments, and that not only the persons but the clothing, &c. should be subjected to a process of fumigation, with the view of avoiding contagion, prior to admission in all such instances.

Art. XVI.—*Chloride of Ammonium, a Specific in Hepatitis and Hepatic Abscess.* By William Stewart, M.D., Surgeon 2nd Battalion 21st Royal North British Fusiliers.

In December 1869, my experience in the use of the medicine being then somewhat limited, I communicated a paper "On the use of Chloride of Ammonium in the treatment of Suppurative Hepatitis and Chronic Affections of the Liver," which was published in the *Lancet* of May

7th, 1870. At that time I cherished the belief that a more extended experience in the use of "the remedy" would not fail to furnish fresh proof of its efficacy in certain hepatic diseases; and so far, I am glad to say, my most sanguine expectations have been fulfilled. It still remains to be seen whether it will prove equally efficacious in a variety of climates and in other hands, and whether I am justified in now conferring on it, for the first time, the title of "a specific" in the cure of hepatic affections. Time will decide both points; meanwhile, I have received favorable accounts concerning its use from Tonghoo, a place which is said to be somewhat similar to Hyderabad (Deccan) in climate, where hepatitis is prevalent and fatal. From other places too, favorable accounts of the success of the treatment have reached me; and in private practice the results have been equally satisfactory. Mr. J. Maynard, Surgeon and Health Officer of the Port of Rangoon, has kindly furnished me with the report of a case which occurred in his practice; it is an interesting one, faithfully and fully recorded, and well illustrates the therapeutic use of the remedy, and the points to be observed in its administration. With his permission, I gladly publish the case and its accompanying letter, as the latter contains some practical hints which may be serviceable in the sick room.

In my former paper in the *Madras Monthly Journal of Medical Science*, of June 1870, after some general observations on the disease and its treatment, I gave a detailed account of the remarkable train of effects following on the exhibition of Chloride of Ammonium as observed in the different forms of hepatitis and abscess of the liver met with in this country; and from the silence of the writers on Materia Medica and Therapeutics on the above points,* and my own experience in the use of the medicine in cases in which it had been administered either as an experiment in health or as a remedy in diseases other than hepatitis, in which no such remarkable train of effects were manifested, I was led to the inference "that the medicine is not only a specific in certain hepatic affections, but that its peculiar

* Most systematic writers on the practice of Medicine, in treating of hepatitis, make no mention of Chloride of Ammonium in its treatment; a few allude to it cursorily among the medicines which have been recommended in chronic hepatitis (cirrhosis) (*Watson, Tanner*), or as an eliminant when suppuration has taken place (*Morehead*), or merely as a mild tonic in hepatic abscess (*Copland.*)

action being manifested in any given obscure case may be considered as diagnostic of hepatic disease." "The above observations, however," were "thrown out as only probable and suggestive of further enquiry."

A more extended experience in the use of the drug so far confirms me in the correctness of the inference I then drew on somewhat slender grounds; and, I think, I am at length justified in coming to the conclusion that when the sensible and characteristic action of the medicine is manifested in any given obscure case, such characteristic action *is diagnostic* of hepatic disease. At the same time I can conceive such action wanting in a case of hepatitis, either from idiosyncracy or the concurrence of disease in another organ or parts of the body, or from want of attention to the points to be observed in the preliminary and general treatment, or, as in a case of hepatic abscess, which came to my knowledge lately, where mercury had been previously administered and a fresh disease (mercurialism) was thereby superinduced, which seemed to interfere with the characteristic action of the Chloride of Ammonium afterwards administered.

I am further led to conclude that Chloride of Ammonium is not only a specific of much efficacy in hepatitis and hepatic abscess; but that, in this respect, none of the so-called specifics in other diseases are at all comparable with it in regularity and certainty of action; and that as an alterative and eliminant in promoting the absorption of pus, it is without equal and of extensive application and not confined to abscess in any one organ or part of the system.*

Before proceeding to a second series of illustrative cases, I am desirous of giving the result of my experience up to the latest date, and also of touching as briefly as possible on some important points necessary to be attended to in the auxiliary treatment, but which have been either passed over, or but slightly alluded to in my former paper. And here I cannot do better, than quote from a pamphlet at present in the hands of the printer, which I hope shortly to circulate among the profession, and in which the result of my experience is fully and, I trust, clearly set forth:—

It will be seen that purgatives, commonly recommended

* Deputy Inspector General Jackson, Indian Medical Department, informs me that Dr. Blacklock, of the Madras Medical Service, was many years ago in the habit of using Chloride of Ammonium in the General Hospital, Madras, in the treatment of Psoas abscess with marked success.

at the onset of the disease, have been carefully avoided, and for this reason, that, I believe in many instances, the exhibition of such irritants lays the foundation of the dysentery so often an accompaniment. A mild purgative may be prescribed at the outset, if indicated; but, with the use of Chloride of Ammonium, its repetition will seldom be required.

Counter-irritants, too, with the exception of sinapisms, in a few instances, have not been employed: blisters are contraindicated, owing to their irritant action on the kidneys, which would prevent the due elimination of diseased products by those emunctories.

There is a risk also, "that the cutaneous and subcutaneous fulness, caused by serous effusion, consequent on the irritation of a blister, may, if present at and below the margin of the right ribs, be mistaken for the sign of liver enlargement, and an erroneous inference, in regard to the progress of the disease, be therefore entertained."—(*Morehead.*)

Since the 1st of September 1869, from which time the systematic treatment of hepatitis by Chloride of Ammonium first commenced (a period of nine months), 31 cases of the disease have been treated, either by myself or the Assistant Surgeons of the Battalion; and of these, six were undoubted cases of abscess of the liver, presenting the physical signs, the general symptoms, and the well marked hectic fever, diagnostic of the disease under such circumstances. In four of the cases, the hectic fever was severe; in one especially so, and accompanied with excessive wasting of the tissues, and extreme prostration of the vital powers—patient exhaling the cadaveric odor, at times observed in low and exhausting disease with typhoid symptoms.

Hepatitis is a disease of this station, and has been the occasion of much mortality here, as elsewhere. From a statement, kindly furnished by Dr. Shelton, Principal Medical Officer, British Medical Service, I find that in the Head Quarters 2-24th Regiment, Rangoon, and Detachment Port Blair, out of a total strength of 795, there were during the year 1868, 32 admissions and 5 deaths from hepatitis. "The post-mortem in each instance shows the cause of death to have been hepatic abscess."

During the same period (1868) in the 2-21st Fusiliers, at Secunderabad, out of an average strength of 868, there were 86 admissions and six deaths from the same cause. The disease was treated on the usual expectant plan, and with a result not very satisfactory. Compare these figures with those which follow, and see how different is the result obtained under the treatment by Chloride of Ammonium.

Since September 1st, 1869, to 31st May 1870 (a period of nine months), there have been 31 admissions from hepatitis at this station, out of an average strength of 608; of these, six were undoubted cases of abscess of the liver, and in several abscess was strongly suspected. All of the above were successfully treated, without a single death. It is also remarkable that, since the arrival of the battalion at this station at the end of December 1868, up to 31st May 1870, embracing a period of seventeen months, there have been 58 admissions from hepatitis, and but one death, the fatal termination in this instance furnishing negative proof corroborative of the testimony already adduced of the very great success of the Chloride of Ammonium treatment, for it is to be observed that the patient died at a period antecedent to the introduction of that practice, that dysentery of a very severe type supervened, uncontrolled by any of the remedies employed, and that the autopsy revealed the existence of abscess, which occupied almost the entire liver, the structure of which was reduced to a mere shell. The large intestine was ulcerated throughout its entire extent, and in places gangrenous.

In not one of the cases treated by Chloride of Ammonium was there the slightest tendency to dysentery observed.

According to the Army Medical Department Report for 1867, out of a total strength of 56,896 European Troops in India, there were, during the year, 3078 admissions from hepatitis, and 157 deaths. During the same period 368 were invalided on account of the disease, and 96 were discharged the service at Netley.

I confidently look forward to a gradual and great reduction of this vast expenditure of life and health, in time to come, if the means pointed out in these pages be faithfully and earnestly carried out, recollecting that it is by attention to small and seemingly unimportant matters as regards regimen, diet, and nursing, as much as by the prescribing of medicine, that success will be attained. The medical

man must think nothing beneath his care and attention, particularly where untrained orderlies and soldier attendants, possessing no knowledge of nursing, are placed over cases of serious illness. The words of the poet are particularly applicable to affairs medical—

> "Think nought a trifle, though it small appear;
> Small sands the mountain, moments make the year."

At the risk of being considered tedious and unnecessarily prolix, I cannot refrain from making the following quotation from a leading article in the *Lancet* of 30th October 1869, wherein the writer, speaking of the difficulties which the doctor encounters in civil life in obtaining aid in the management of the sick room, goes on to say:—

"In all matters about which he (the Doctor) may omit "to give explicit directions, the most fatal errors are fre- "quently made. For example, it is very common for "patients to be killed, after enfeebling illness, and when "with proper care they would recover, by being suddenly "raised from the recumbent to the semi-erect posture for "the purpose of taking nourishment. No practitioner who "neglects to lay down very strict rules on this point, will "fail to have many unexpected and sudden deaths amongst "exhausted patients; deaths for which he may not always "be able to account, but which may be shown, on enquiry, "to be traceable to the cause we have indicated."

Whether the patient be very low or not, the condition of an inflamed liver is not unlike that of an inflamed joint, demanding strict quiescence in the recumbent posture; and therefore a steady and intelligent attendant should constantly wait on the patient in all severe cases, and the bed pan and urinal should, at all times, be at hand, so that the patient may not have the least occasion to quit his bed.

Whilst writing, an instance has presented itself which shows forcibly how easily a recrudescence of inflammatory action may be brought about by a cause which, at least in this instance, was entirely under the patient's control. A man in hospital, suffering from a severe attack of acute hepatitis, was suddenly seized with a recurrence of the acute symptoms, local and general, after these had been allayed for a considerable period by the previous treatment. The reason was easily discovered; on enquiry, I found that the patient, having become tired of lying on his back,

turned on his side for a short time, and in this simple manner caused the mischief.

In my former paper my remarks were chiefly confined to the therapeutic uses of Chloride of Ammonium in the primary acute stage of hepatitis, and in hepatic abscess; in chronic hepatitis, however, it is equally efficacious. In short, I have found it valuable in hepatic affections of whatever form, whether depending on organic disease, or functional derangement. I have also found chronic dysentery, associated with chronic disease of the liver, yield to a few 20-gr. doses of the Chloride of Ammonium, after Ipecacuanha and other remedies had failed; and I have before me notes of the case of a young officer, similarly affected, whose dysentery was checked after a few doses of 8 grains each. In such cases from 5 to 20 grains may be given, dissolved in 2 ounces of infusion of Cascarilla, twice or thrice daily, according to circumstances; and to cover the saltish taste of the medicine, a little Ext. Glycyrrhizæ (say grs. v.) may be added to each dose. In passive congestion of the liver from cardiac disease, I have found a few doses (grs. xx.) of the medicine effect a remarkable reduction of the enlarged viscus, and afford great relief to all the symptoms; in fact, the specific action on the liver is manifested in almost all the diseases to which that organ is liable.

It may be interesting to note the number of grains of the medicine administered in the treatment of the 31 cases of hepatitis in the Hospital 2-21st Fusiliers from 1st September 1869 to 31st May 1870, taken from a record kept by Passed Hospital Apprentice M. Devanboo, attached to the Battalion.

Total number of grains		... .	21,926
Average	do	administered to each patient ...	707·27
Maximum	do	in any one case (abscess of liver)	2490
Minimum	do	do (hepatitis)	120
Average	do	exhibited to each patient in six cases of abscess of liver... ...	1482
Simple hepatitis*		... ...	569

It will be seen from the above figures that the medicine is used pretty freely, and that in some cases very large quantities have been required; in fact, its use should be persevered in till its sensible effects be no longer manifested,

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* Several of these were strongly suspected to be cases of latent and deep seated abscess.

or only in a slight degree, and it is well to continue it for some time afterwards in smaller and more frequently repeated doses, in the event of liver enlargement with feeling of stiffness, weight, or other uneasiness continuing.

Case 3.—Drummer J. S., 2-21st Fusiliers, five years in India. Admitted into Hospital on the 21st December 1869, complaining of acute pain and tenderness over the entire abdomen. Towards evening, pain of right hypochondrium was also complained of. Decubitus dorsal, unable to turn on either side, or take a deep inspiration; countenance sallow and anxious, skin hot; pulse frequent, tongue furred, white; six leeches were at once applied to affected side, after which he had tepid bath, and bran poultice to right hypochondrium. Was ordered

Liquor Amm. Acet. ℥ ii. with
Tinct. Hyoscyami ♏ v. every half hour.
Barley water to drink.

22*nd*.—Abdominal pain relieved; pain of right side and along inferior margins of lower right ribs continues, the slightest pressure being intolerable, skin cool and moist, pulse frequent. To have Chloride of Ammonium gr. xx. twice daily. Beef tea two pints; barley-water four pints.

23*rd*.—(*Vespere*.) Was seized with sickness of stomach, and vomited a quantity of green bilious fluid, when he says he "felt something tear" in his right side.

24*th*.—The medicine yesterday had the effect of relieving local pain and tenderness, and induced free action of the skin and kidneys. Pulse 102, irritable, skin bathed in cold perspiration. Tongue cleaning; pain of side relieved; feels weak. Ordered beef tea four pints; (to be boiled down to two), six ounces of port-wine. Barley-water for his thirst.

Vespere.—During the day patient became alarmingly ill, and was for a short time semi-collapsed, requiring the exhibition of stimulants, &c., with the effect of restoring the pulse and heat of surface. Well-marked hectic fever, surface bathed in cold, clammy perspiration. Countenance sunken, anxious and murky; pulse 124, small and irritable. Continue medicine. Diet as before.

25*th*.—Expresses himself as better this morning. Slept sound during the night; pain of side relieved, but from time to time returns slightly. Each dose of the medicine brings the usual two hours or more of relief. Pulse 108, surface

bathed in perspiration. Cont. med. Diet as before, with two pints of milk.

26*th.*—Slept during night; looks more cheerful; skin cool; tongue clean; pulse 98. Pain of side is now but slight, expresses a wish to have the medicine more frequently, owing to the relief from pain experienced after its ingestion. Repeat the medicine thrice daily.

27*th.*—Is better; pulse 96. Continue medicine.

29*th.*—Since last report hectic fever with evening exacerbations and profuse sweating has been present. There is considerable fulness of right hypochondrium and towards margins of right inferior ribs; but there is little pain of those parts except on pressure or lying on left side.

January 2*nd*, 1870.—Since last report has steadily improved; countenance bright and cheerful; appetite improving.

Cont. medicine twice daily.

4*th.*—Still some fever, increasing towards evening. Is however on the whole improving and looks hopeful and cheery. Pulse 92, soft and pretty full.

Continue medicine.

8*th.*—Progressing favorably. Pulse 88; appetite good; fulness of right side gone; and moderate pressure over hepatic region causes no pain. Febrile symptoms are now but slight.

11*th.*—Since last report fever has returned with evening exacerbations. Skin hot; pulse 104, irritable.

Continue medicine thrice daily.

12*th.*—Felt much better yesterday evening after his midday dose, slept well during the night. Pulse 90; skin cool and moist.

19*th.*—Since last report has been almost free from fever. Pulse 88; skin cool; appetite good.

23*rd.*—Is daily gaining health and strength. Pulse 86, fuller and stronger.

27*th.*—Permitted to sit up a little during the day. Low-pudding diet and two eggs.

February 9*th.*—Since last report has steadily improved in heath, and has been able to take exercise on foot in the

hospital enclosure. Has taken no medicine for several days. Discharged to proceed to England, with the invalids of the season for change of air.

Case 4.—Private R. T., $11\frac{3}{12}$ years in India,* was admitted into Hospital 7th May 1870, from off guard, "doubled up" with acute pain of right hypochondrium, extending round to loins and upwards to top of right shoulder. Was unable to stand erect, surface bedewed with cold perspiration. Had a bran poultice to his side and an anodyne draught. For the past nine months has suffered pain, from time to time, in right hypochondrium, with accompanying chills at night, pyrexia, and cold sweating. The liver is enlarged and acute pain is felt at a point between the fifth and sixth ribs midway from their extremities, aggravated on the slightest pressure. Decubitus dorsal, unable to lie on either side; tongue slightly furred, moist, broad and flabby, presenting at the sides, indentations of the teeth; skin perspirable; pulse of good volume, 84; urine high-colored. Ordered Liquor Ammon. Acet. ℥ ii. with Tinct. Hyoscyami. ♏ v. in barley-water every hour. Six leeches over the seat of pain in right hypochondrium, and at 5 P. M. to have grs. xx. Chloride of Ammonium.

8*th*.—The usual characteristic effects followed the exhibition of the medicine yesterday evening, but (as in the case of Private F., another case of hepatic abscess at present under treatment) patient felt a chill and a sensation of cold for some time before the sensation of heat commenced. (This phenomenon was, however, a purely subjective symptom, as was evidenced afterwards by thermometric observation, and may depend on difference of climate, the rains having just commenced). Patient felt drowsy, and fell asleep in about half an hour after the dose, and awoke in an hour or so, as he expressed it "light and refreshed and able to bear the weight of his own body," which before distressed him. This morning he feels no pain in the recumbent position, and can move slightly in bed without pain. Pulse 98; tongue slightly furred. Continue Chloride of Ammonium grs. xx. twice daily.

9*th*.—Is much easier, no pain of side except on a deep inspiration; pulse 100. Marked hectic symptoms have been present since yesterday, pointing unmistakably to the existence of abscess of the liver.

* Had two attacks of hepatitis in 1866, when stationed at Secunderabad.

10*th.*—Yesterday it was hot and oppressive and patient was bathed in perspiration; his pulse was weak and frequent, and he was ordered four ounces of port-wine. This morning he is much better; pulse 79, pretty full; countenance cheerful. Perspires much less. Continue medicine.

13*th.*—Progressing favorably since last report; but there is slight pyrexia especially towards evening, evidenced in increased heat of hands and arms, and forehead and face feel hot at times. Pulse this morning 64, full and regular. To have a dose of simple diaphoretic mixture at 11 A. M., and again at 2 P. M.

15*th.*—Is much better. Diaphoretic mixture relieved the feverish symptoms; skin now cool and perspirable; tongue clean; pulse 62; appetite returning. Continue Chloride of Ammonium morning and evening; and Liquor Ammon. Acet. ʒ i. with Tinct. Hyoscyami. ♏ v. in the interval, as before.

18*th.*—Doing well; pulse 56, full, slow, and regular; port-wine four ounces.

26*th.*—Since last report has continued steadily to improve; tongue clean, smaller, not so flabby as formerly, and indentations caused by teeth disappearing. Hepatic dulness commences over sixth rib of right side, and extends about half an inch below margins of right lower ribs in a gently curved line upwards towards epigastrium. Pari passu with the improvement of the symptoms, local and general, the action of the medicine has been less and less manifested, so that its effects are now not so marked.

30*th.*—Since last report, patient has been allowed to sit up, from time to time, daily; he is now convalescent, and beyond feeling his side "a little stiff," is free from pain or other uneasiness. The edge of the liver can no longer be traced under the margins of lower ribs, and firm pressure causes no pain over the hepatic region.

RANGOON, 6*th June* 1870.

MY DEAR STEWART,—I have much pleasure in sending you the notes of a case of Acute Hepatic Abscess under my care, and which you kindly saw with me on two occasions.

Having had the advantage of reading your paper on the treatment of Hepatitis with Ammonium Chloride, I have

taken some care in noting its therapeutic effects throughout the treatment; and in the report have taken down the exact effects of the medicine as described by the patient himself, and which seem to agree in a marked manner with the notes of those cases treated by yourself.

I would remark that, instead of using the hot fomentations as usually adopted by you in hospital practice, I find that in "private practice" it is better to use hot applications in a dry form; as from want of proper attention or through neglect, or from the greater trouble in using hot fomentations, I seldom find my instructions carried out; and even if they are, the patient generally complains of great discomfort and sometimes chillness from having his clothes, bed linen and bed saturated, which often tends to produce evil results.

The plan I adopt, and which is easily carried out, is to place two bricks on a burning charcoal chatty, on the top of these I place two bags of the size required, and only two-thirds filled, with one part salt and two parts bran. I do not fill the bags, as they would not then become so readily conformable to the shape of part required.

The heat is retained longer than with hot fomentations and is much pleasanter to the patient; and I believe has an equally beneficial if not better effect. One bag is always kept hot during the application of the other.

Although this is the first case of hepatitis that I have treated with the Hydrochlorate of Ammonia, I shall (from the decided therapeutic effects I have seen produced in the treatment of my own recorded case, and from the experience I have gleaned from having had the opportunity of seeing the same treatment adopted with such success in your own hospital) undoubtedly carry out a similar plan in all cases that may hereafter come under my care; and I trust and believe with like beneficial results. I sincerely hope that the perusal of your pamphlet may lead more medical men to give this treatment a trial; and I feel sure that if the rules laid down are properly carried out, they will meet similar success to cases recorded, and will look upon the Ammon. Chlor. as an almost specific therapeutic agent in the treatment of hepatitis. If you think my report of any interest I leave you to make what use you please of it.—I remain, yours sincerely,

(Signed) F. MAYNARD.

Case of Acute Hepatic Abscess under the care of F. Maynard, Surgeon, Health Officer, Port of Rangoon.

May 4th, 1870, 10-30 A. M.—Mr. W., Æt. 35, "Eurasian," born in Burmah (of highly nervous temperament, accustomed regularly to take his three glasses of grog daily, besides exceeding when in company) visited me and complained of acute pain in the right hypochondrium, extending over nearly the whole of right side of abdomen, and more especially severe in the iliac region, was unable to stand upright or to take an ordinary deep inspiration, and constantly cried out with pain. On examination found slight fulness below margin of right ribs and great tenderness on the slightest pressure over whole of right side of abdomen, skin hot, pulse 126. An anxious expression of countenance, sallow complexion; tongue furred. Stated he had suffered from pain in hypochondrium for six days; that three days ago he had a distinct rigor followed by fever, and that the pain had been increasing up to date. I advised his return home immediately and ordered perfect rest, hot application to the side and Pulv. Doveri grs. viii. immediately; and to repeat in four hours. At 2-30 was visited by Dr. Stewart and myself; found him lying on his back with legs drawn up, and unable to move owing to the acute pain. His skin was slightly moist and pulse reduced to 116, (excessive action of heart on first examination, probably attributable to the exertion of walking to see me under existing circumstances), was unable to bear percussion or the slightest pressure on any part of right side of abdomen. Ordered eight leeches to side and Liquor Ammoniæ Acet. ʒ ii., Tinct. Hyoscyami ♏ v. in barley-water every hour and at bed time Tinct. Hyoscyami ʒ i. Hot applications with salt and bran bags to be constantly applied after removal of leeches.

5th.—Passed a bad feverish night, had no sleep; pain more or less removed from iliac region and centred over the hepatic region, and especially just below the margin of right inferior ribs, where it was very severe, unable to bear the slightest pressure or turn on either side. Bowels open once during the night, dark colored and very offensive, skin slightly moist and pulse 102. At 9-15 A. M. administered Ammon. Hydrochlor. grs. xx. in cinnamon water. At

9-35, twenty minutes after, he described that he had a sensation of warmth in his stomach which gradually extended over the whole surface of body; general perspiration gradually followed and the pain in hypochondrium was sensibly relieved, and he began to think he was "getting all right again" (his own words.) He felt drowsy and inclined to doze off to sleep; but shortly a kind of twisting pain came on in his right groin and gradually extended up, returned to its former seat below margin of right inferior ribs. Visited at 2 P. M.; found abdomen much distended with flatus, of which he was constantly passing large quantities. Had made urine twice, high colored and scalding; pulse full 102. Tongue dry and furred, complaining of great thirst, ordered milk and water and barley-water; and to continue hot applications. Visited him at 6 P. M.; had made water once since 2 P. M.; had slept three-quarters of an hour, and on the whole pain greatly reduced. Abdomen less distended and feeling altogether comfortable. Pulse 100; tongue dry and furred, and constant thirst. In addition to his barley-water and milk, an egg to be beaten up with milk. Repeated Ammon. Hydrochlor. Haustus. At 5 P. M. same symptoms as described after first dose ensued. At 5-30 pain removed towards centre of abdomen, 3 inches below umbilicus.

6th.—Visited at 10-15 A. M.; after last evening's draught the pain was relieved for some time, but gradually returned to old spot; he had passed a bad night; no sleep. First thing in morning, vomited eggs and milk and stated that afterwards pain had shifted over to left side. At 8 A. M. took Ammon. Chlor. Haustus, and 13 minutes after, had a great deal of pain in stomach, which only lasted five minutes, and at 8-30 sensation of heat of the whole cutaneous surface set in, followed by perspiration.

9 A. M.—Had a moderate, soft, dark and offensive motion; after this he dozed off, and I found him asleep when I called.

Visited at 1-30 P. M.—Had taken a cup of chicken broth with relish; made water more abundantly. Pulse 108; smaller; skin moist; pain in hepatic region less; unable to turn on either side.

Visited again at 6-15 P. M.—Passed one motion since 1-30 P. M. light colored and watery. Took chicken broth at 3 P. M. Took Ammon. Hydrochlor. Haustus at 5 P. M. On

this occasion no peculiar sensation about epigastrium observed, but half an hour after, general sensation of warmth, perspiration and drowsiness gradually ensued. No pain in hepatic region, excepting when moving, and can now allow slight pressure below margin of right lower ribs where there is a distinct prominence; makes water much more abundantly. Thirst still great, pulse 102, skin moist, tongue furred, the bran and salt bags have been kept constantly applied, and from these he states he experiences great comfort and relief.

7th.—Visited at 10-30. Had slept a little last night, bowels opened eight times since 11 o'clock last evening, dark brown, watery, and offensive, accompanied with a large amount of flatus. Has an anxious expression of countenance with sallow complexion, and conjunctivæ slightly injected; is very hysterical and low, but though feeling very weak, he describes himself as better as he can turn over on to the left side without pain, and has only slight pain at margin of lower ribs on right side when he tries to raise himself up. Pulse 96; tongue cleaner; thirst still excessive; to continue former diet with addition of beef tea. The morning draught only caused sensation of warmth and perspiration over head and extremities. Visited at eight P.M., had no perspiration after evening draught, but feels inclined to sleep; complains of pain again in the old spot occasionally. Pulse 102.

8th.—Visited 8-45 A. M. Slept well, but had four motions during night. Pulse 90; tongue less furred. Ordered Pil. Hydrar. gr. i. Pulv. Doveri. grs. iii. every second hour during day. Diet and treatment as before.

Visited at 7 P. M. Pulse 90; skin cool and moist; makes large quantities of water; pain less.

9th.—Visited 9 A. M. States that the Ammon. Hydrochlor. Haustus has not now the same effect as formerly, only producing drowsiness and slight perspiration, seems very low and desponding. Ordered port-wine and jelly in addition to former diet.

2 P. M.—Visited by Dr. Stewart and self; case considered by Dr. Stewart to be progressing favorably, can bear slight pressure over hepatic region, but as no good can result from these examinations, I forbear making them. To omit Pil. Hyd. and Pulv. Doveri.

10*th*.—No pain referred now to hepatic region, but a dragging sensation described; can breathe freely and turn over on both sides. Pulse 90. To continue same diet and treatment.

11*th*.—Visited 10-30 A. M. Slept well last night, has no pain on turning or getting up, only experiences the dragging sensation as described yesterday, when he gets up or takes a deep breath. Tongue clean and moist; pulse 84; perspired profusely last night about the head and face; body hot; bowels once open, of better consistence. Ammoniæ Hyd. taken night and morning, no perceptible effect produced but that of drowsiness. Slept off and on greater part of day.

12*th*.—Had profuse perspiration all last night, and towards morning his head, hands, and feet were burning hot; this passed off, and at 10 A. M. he stated that he felt quite well, only weak. Pulse 84.

13*th*.—Last night experienced same profuse perspiration and heat of hands, &c., as described yesterday, and lasting three or four hours. This morning for first time felt pain in right shoulder which lasted about two hours. At 10 A. M. had a distinct throbbing sensation under margin of lower right ribs, which lasted a few hours and was apparently relieved by the constant application of salt and bran bags. Pulse 90.

14*th*.—Visited 11-45 A. M. Pulse 90; skin generally dry; hands hot and dry. Slept from 7 o'clock to 12 last night, and after that very restless, profuse perspiration of head and face, and great heat of surface of body and extremities; this passed away towards morning. Tongue furred and parched; incessant thirst; no pain except in right shoulder.

15*th*.—Visited at 3 P. M. Went to sleep at 8 o'clock last evening and awoke at 10 with sensation of great heat in head and extremities, and especially in palms of hands; this lasted about twenty minutes, and then profuse perspiration ensued. Slept for four hours and awoke feeling well. Pulse 92; bowels opened three times, passing much wind. The Ammon. Hydrochlor. Haustus to be omitted in morning and a diaphoretic mixture ordered during day.

16*th*.—Visited 12-30. Had no return of fever last night. Bowels relaxed; pulse 86; skin soft and moist. Treatment as yesterday.

17*th.*—Visited 11-30 A. M. Pulse 75, skin soft and moist. Tongue cleaner; slept pretty well; bowels open once to-day; has occasional throbbing pain in hepatic region.

18*th.*—Altogether better; pulse 76; no pain; slept well; has no thirst. Continue diaphoretic mixture and Ammon. Hyd. only at bed time.

20*th.*—Same as yesterday, &c.

21*st.*—Pulse 80; had a hard costive motion. To discontinue diaphoretic mixture and continue Ammoniæ Hyd. bis in die.

25*th.*—Has been gradually improving; can get up by himself, turn round and walk without pain and can bear firm pressure over whole hepatic surface. Allowed to sit up. Ammoniæ Hyd. reduced to grs. x. bis in die with Decoct. Cinchon. nocte maneque. Ordered mutton chop and three glasses port-wine daily.

30*th.*—Has a good appetite; tongue clean; bowels regular. On examination I find great enlargement of liver, which, on standing up, extends to 3½ inches below margins of inferior right ribs, and is hard, firm, and the size of a flattened orange. No pain experienced on firm pressure or percussion over this. Patient describes himself as feeling perfectly well, free from any pain and gaining strength daily, can take moderate morning and evening exercise, and is gradually commencing his ordinary diet. Considered convalescent.

This case will be carefully watched, and notes of interest recorded.

Note.—It may be worthy of note, that in India, Chloride of Ammonium is obtainable at a cheap rate in the bazaar, under the Hindustani name *Nous-ádar*, (Duk.) *Nouságar*.* I have obtained the salt, sufficiently pure for medicinal purposes, in the Rangoon bazaar for Rs. 1-12 per viss (equal to 3½ lb avoirdupois). I mention these facts because on one occasion, while I had several serious cases under treatment, I ran out of the salt completely, and none was obtainable in the Medical Stores—a circumstance likely to happen in Indian Mofussil stations, as hitherto the drug has been but little in demand, having been used chiefly in the preparation of cold and other lotions.

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* The Burmese name is *Zavasa*.
In Tamil it is called *Navách-chára*m.
In Ceylon it is known under one of its Tamil names *Navácháram*.

ART. XVII.—*On the Bark of the Hymenodictyon excelsum.*

By J. BROUGHTON, Esq., Government Quinologist.*

(Communicated by the Inspector General Indian Medical Department.)

CERTAIN chemical researches which I have made on an indigenous febrifuge have just been completed. I herewith beg to communicate the broad results of the inquiry according to G. O. No. 241, of 22nd January 1870.

2. The large forest-tree "*Hymenodictyon excelsum*" is a native febrifuge of considerable interest, not so much from its proved efficacy in medicine as from its history and botanical relations. It belongs to the same natural order as the true Cinchona, and it so greatly resembles them in appearance that it was named for many years *Cinchona excelsa*. Being thus considered a Cinchona indigenous to India, very considerable expectations were entertained that it would be found at least a most valuable febrifuge, if not an actual source of quinine.

3. Writers on Indian *Materia Medica* allude in doubtful terms to the bark of this tree.

4. Ainslie, speaking of the various substitutes that had been recommended for Peruvian bark, mentions the bark of *Cinchona excelsa* as having been ascertained to possess powerful tonic and antifebrile virtues.

5. O'Shaughnessy† speaks of the bark as follows :—

"The two inner leaves of the bark possess great bitter-
"ness and astringency; the bark is used by tanners, and
"also as a medicine among the Hindoos is cases requiring
"astringents.

"We have analyzed the bark of *Cinchona excelsa* from
"the Botanic Gardens of Calcutta, but could not detect any
"alkaline ingredient: nevertheless, the trees of hilly regions
"may furnish the valuable desideratum. The stamina
"being contained within the tube affords much ground for
"expecting the discovery of a febrifuge alkaline in this
"species."‡

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* Letter to Acting Secretary to Government, Revenue Department, Fort St. George, dated 6th June 1870.

† Bengal Dispensatory, 1842, pp. 394—395.

‡ I may mention that this structure of the flower does not appear to be coincident with any special excellence in the bark of the Cinchonas of the Neilgherry Plantations.

The writers of the New Indian Pharmacopœia mention the bark as follows :—

"Considering the natural order to which the tree be-
"longs, and the sensible properties of its bark, it is not
"improbable that it may prove a valuable remedy. In all
"future inquiries into the subject of Indian anti-periodics,
"this bark should be one of the first to which attention
"should be directed."

6. These circumstances, therefore, led me to make a full investigation of the chemical constituents of the bark, in the hope that I might be fortunate enough to discover a proximate principle, whose constitution might perhaps throw light on that of the true Cinchona alkaloids.

7. By the kindness of Lieutenant-Colonel Morgan, Deputy-Conservator of Forests, I obtained a supply of the fresh bark from the neighbourhood of Mudumullay in Wynaad. The bark possesses the remarkable property of being bitter when quite fresh, but of this bitterness diminishing on keeping, so that after a few days, it has so decreased that the bark becomes nearly tasteless.

8. After much labour I was enabled to obtain the bitter principle in a pure crystalline state. A full examination and analysis of this substance showed me that it was identical with æsculin, the fluorescent and crystalline principle of Horse-chesnut bark discovered by Frischmom, and subsequently analyzed by Fromsdorff in 1835. The chemical details of the investigation and the data for this conclusion are scarcely suitable for detail here. They are to be found in the Pharm. Journal, Volume IX., page 418.

9. It is a somewhat singular circumstance that the bitter principle of this Indian tree should be the same as that of the Horse-chesnut. It is also remarkable that the bark of the latter has obtained a certain reputation of being like the Hymenodictyon in India a good substitute for Cinchona bark. Lindley and other authors mention that it has been recommended as a valuable febrifuge in intermittents.

10. The very general impression that this Indian false Cinchona contained quinine receives explanation from the properties of æsculin. The solutions of this substance like those of quinine are fluorescent, and are even more beautifully so. An observer, who did not examine the other very

dissimilar re-actions of the two substances, might thus be misled by the coincidence of so peculiar a property.

11. The loss of bitterness undergone by the bark on keeping is now also readily explained, since æsculin in contact with decaying organic substances is decomposed, and produces a comparatively insoluble substance, *æsculetin*, which has but a slight bitter taste.

12. Being informed that there were certain differences in the Hymenodictyon of South India, and that of the mountain ranges of Bengal, I was desirous of testing the latter before communicating my results as being perfectly general. By the kindness of Mr. C. B. Clarke I was supplied with some bark of the original Hymenodictyon bark of Roxburgh from the Calcutta Botanic Gardens. This enabled me to prove that there was no essential chemical difference in the bark of the Bengal tree and that from South India.

13. The bark of *Hymenodictyon excelsum* thus differs entirely in its chemical character and products from Cinchona bark. Containing no trace of quinine or related alkaloid, the expectations once entertained of its medicinal value appear to have little support in fact.

14. As æsculin will eventually be both a dearer and less plentiful product in this country than the alkaloids of Cinchona, and is certainly of inferior therapeutic value, it appears to me to be scarcely necessary to make any medical trials with it. Should it, however, be thought desirable to do so, I shall of course be ready to supply the necessary material in a pure state.

ART. XVIII.—*Reduction of Dislocation of the Hip-Joint by the "Flexion Method."* By W. FARQUHAR, M. D., Assistant Garrison Surgeon, and in Medical charge Bowring Civil Hospital, Bangalore.*

MRS. C. A. Rozario, aged 75, East Indian, a withered, attenuated old woman, was admitted on account of an injury to the left hip, caused by a fall into a well three days previously. There was no difficulty in recognizing, at a glance,

* This paper was sent to us some time ago, but lost in transit.—ED.

dislocation on the dorsum ilii. There was shortening, inversion of the whole extremity; the knee was bent and slightly in advance of the other, and the limb was immovablein the direction of abduction or extension. From the thinness of the patient, the abnormal position of the great trochanter and ball of the femur could easily be made out.

The patient having been chloroformed, and with an assistant fixing the pelvis to the cot, the thigh was flexed and somewhat forcibly abducted, and while in this position, was rotated outwards. This proceeding, after two or three attempts, was followed by the snapping noise caused by the ball of the femur gliding into its socket. A long splint was applied, and she was discharged well on the 4th January 1870.

I was about to forward this case as an example of reduction by what was usually been called "manipulation," when I observed in the *Dublin Quarterly Journal* for February, in a review of an excellent work by Dr. Bigelow on Fracture and Dislocation of the Hip, that he gives to the kind of procedure above noted, the designation of the "Flexion method." As this, from the high character of the work, in everything relating to injuries of the hip, is likely to become the standard name, it is therefore adopted here for the sake of uniformity. But for the use of the term in another sense, and the objection to multiplying names, perhaps the "postural method" would have been a more comprehensive name.

In 1866, it fell to my lot to reduce, by like means, the same dislocation in a patient at the other extreme of life. A native child three years of age, was brought to the Garrison Hospital with pain and loss of motion of the right hip arising from a fall the day before. The symptoms pointed clearly to the nature of the injury, and a few movements, such as those described, replaced the ball of the femur in its socket, and caused the disappearance of all the symptoms.

ART. XIX.—*Glycerine, a protection to Chloroform.* By W. FARQUHAR, M. D., Assistant Garrison Surgeon, and in Medical charge Bowring Civil Hospital, &c., Bangalore.

SOME four months ago, while thinking momentarily of the disadvantages of water as a protective covering against the evaporation of chloroform, the idea of trying glycerine crossed my mind. The questions as to whether it would float and remain separate were decided on the spot by a simple experiment. I half filled a test tube with chloroform, and added glycerine to the depth of a quarter of an inch. The glycerine kept on the surface, and at once recovered its position after being smartly shaken. The weight of the chloroform column having been marked off, the tube was left exposed. After ten days, there was no perceptible change. A Urinometer glass was then quarter filled with chloroform, and a quarter of an inch of glycerine superadded. After two months' exposure, there was no loss by evaporation; the glass being required for use, the two liquids were decanted into a bottle, where they have remained nearly two months longer without any signs of admixture. After the above simple trials, I was somewhat surprised to notice, in the *New York Medical Record*, No. 102, which came to hand a fortnight ago, glycerine proposed as "a vehicle for the internal administration of chloroform," "a solution" being prepared by carefully and slowly rubbing up one part of chloroform with two parts of glycerine, the mixture being kept ready for the addition of water. It would appear from this, that persistent friction causes a kind of mixture or solution which violent shaking or prolonged contact is unable to effect.

Squire, in his Companion to the British Pharmacopæia, remarks that "chloroform will not dissolve in glycerine"; also that "chloroform should not be prescribed with glycerine, as it separates." From the above data, it may be concluded that a thin supernatant layer of glycerine will prevent, for any length of time, evaporation of chloroform A short time ago, I saw five one-pound bottles of chloroform, that had recently been unpacked from their English case. The total loss by evaporation was, I was told, two pounds. The glass stoppers fitted accurately, and were covered with leather.

A highly experienced and competent authority, whose opinion I sought on the above suggestion, considers that glycerine would be very useful in stores, but would, like all other protecting fluids, fail in transit, if by accident the case containing the bottles were turned on its side or bottom. The same gentleman informs me that a glass stopper, secure it as you may, forms simply no protection against escape, and that even the best corks, when acted upon by chloroform or æther for a month or two,—as in the voyage round the Cape—become shrivelled and quite changed in texture! and that he had seen a large phial cork shrunken almost to the dimensions of a button.

It occurs to me that this new difficulty might still be met by glycerine, by applying it outside the glass stopper instead of to the surface of the chloroform. If the usual glass cap made to surmount the stopper, were pierced by a small opening at the top to be closed by a stopper, the cap might then be filled with glycerine, and the whole secured. This is mentioned merely as an illustration, as a little ingenuity expended on the construction of the necks of chloroform-carrying bottles, would suffice to simplify this method. If glycerine has the power which I take it to possess, of resisting for a long period dissipation by moderate heat and exposure, chloroform might be secured in a still more simple way by wrapping fine tow or cotton, well soaked in glycerine, round the neck of the bottle and stopper, and fastening firmly over all a double piece of softened bladder or other material. As the above suggestions have only presented themselves during my writing on the subject, they are thrown out roughly in the hope that they may be thoroughly tested by any one interested in the matter.

Should a trial of the outward application of glycerine confirm the utility of the hint, its value as a protective would be greatly enhanced, as by such a method, not only chloroform, but æther and all other volatile liquids could be effectually preserved from waste, either in stores or in transit.

Where the chloroform itself is covered with glycerine, the latter could be drawn off by a pipette when the former is required for use.

ARSENIC IN DIABETES.

A PAPER recently appeared in a French medical periodical, recording some facts which seem to encourage the trial of arsenical preparations in the treatment of *Diabetes Mellitus*. As most practitioners in India are called upon to treat this disease, and not perhaps unfrequently; and as a large majority of them, we fear, find it more or less intractable, a summary of the paper may be interesting, if not useful, to our readers. About twelve years ago M. Devergie was called upon to treat a lady suffering severely from vulvar prurigo of old standing. Sleep could only be obtained by the application of a bladder filled with ice. All the usual medicaments, except arsenic, had been employed without success, and the physician determined to try this drug. There was some reason to suspect the existence of diabetes; and the urine, on examination, was found to contain glucose in considerable quantity. Henceforward the prurigo and the glycosuria were observed simultaneously, and both were found to improve under the use of arsenic, and ultimately to disappear. The coincidence of the two affections was noticed in several cases subsequently, and in these the same treatment was followed by the same results. It then occurred to M. Devergie to treat diabetic patients of both sexes, though not suffering from pruritus or any other cutaneous affection, with arsenic; and he found the sugar either disappearing altogether, or its quantity diminishing considerably under this treatment, without submitting the cases to a very rigorous or exclusive diet. In the third edition of his *Traité des Maladies de la Peau*, (1862), the following passage occurs: "This prurigo (of the genitals) in the female, ought to call the attention of physicians to the condition of the urine. I have had several opportunities of finding it connected with glycosuria, and on several occasions

the internal use of arsenic has cured the prurigo and the glycosuria together. I have besides treated uncomplicated glycosuria with arsenic, assisted by a suitable regimen, (not severe as regards exclusion of bread and starches) and I have obtained marked success from the use of this medicine."

Dr. Foville the elder used arsenic in this way for the first time in 1857, in the case of a patient who had lately returned from Vichy. Previously to his use of the waters, a litre of this gentleman's urine contained more than sixty grams of sugar: during his residence at Vichy, the quantity fell to six or eight grams; shortly after his return, it rose again to more than sixty. Under these circumstances, the use of Fowler's Solution was begun, and after a few weeks, there was not more than two or three grams of sugar per litre. This favorable result was permanent after the discontinuance of the medicine. This patient, who had been diabetic for a very long time, is only recently dead. Encouraged by this success, M. Foville subsequently employed arsenic in the treatment of diabetes in a large number of cases, obtaining most frequently favorable results. He knew several diabetic patients, who, having experienced the good effects of this treatment, had recourse to it of themselves when, after having for some time abandoned the use of the arsenical solution, they became conscious of increased thirst, impairment of muscular power, and at the same time ascertained the presence of an appreciable amount of sugar in their urine.

M. Foville junior, taught by his father's successful practice, and that of other physicians in similar cases, wrote as follows in 1868, in a work recently "crowned" by the Academy of Medicine—" Arsenic is one of our most powerful means of checking the symptoms of diabetes, and diminishing, if not removing altogether,

sugar in the urine. We are aware that this treatment is not generally known or practised, but we are not the less fully convinced of its efficacy; and sufficiently numerous facts in which it has to our knowledge effected rapid and permanent improvement, leave us in no doubt upon this point." Jaccoud also tried this treatment and with undoubted success. With it he succeeded in cases where strychnine, which is his favorite remedy, had yielded negative or scarcely appreciable results. "I have not yet" he says, "subjected diabetic patients, who have reached the wasting stage, to this treatment: but several times already I have cured patients still in good condition by means of arsenious acid and a suitable diet."

It is not, however, to be supposed that this treatment is invariably successful. Like every other, it has its failures; and, by a strange chance, M. Bronardel who, *à priori* and theoretically, was altogether disposed to trust in it, has been unable to bring forward any but unsuccessful cases. For instance, Dr. M. after having tried gluten bread and flesh meat, Vichy water, and iodide of potassium without success, betook himself to the use of arsenious acid and with great confidence. "This latter medicine was taken for four successive months, four milligrams a day, in two doses, at the beginning of the first two meals. The amount of sugar remained unchanged, the appetite was not improved, the patient lost 15 kilograms in weight, and his debility continued." The patient had then recourse to a complete change in his mode of living, muscular exercise having been too much neglected, and took long walks daily. In six months he is said to have been perfectly cured! The same writer cites other cases equally unfavorable, met by Berndt and Trousseau; and finally gives a summary of two cases which were, at his request, treated with arsenic without any good result.

These facts would show that there are different forms of diabetes, and that the same treatment is far from yielding invariably the same result. But it remains established, nevertheless, that in a large proportion of cases, the use of arsenic is very beneficial. It is not yet possible to lay down in what forms of the disease this treatment is indicated, and to what cases it is inapplicable. These points time and experience will probably determine. The form in which the drug is exhibited is comparatively unimportant, provided the proportion of active principle contained in the particular arsenical preparation be known and kept in mind. Fowler's Solution seems to have the preference with those who recommend the arsenical treatment. They give it twice a day, beginning with one drop, morning and evening, and increasing the dose by a drop each successive day, until the maximum is reached; which varies with the subject from 12 to 14 drops daily. This dose is persevered in with occasional short intermissions, after each of which the medicine is resumed in half doses, gradually increased as before to the maximum. Some of the failures may be attributable to the preparation used, and the method of exhibition, which was probably not that of progressive doses. This treatment seems worthy of a trial. It will perhaps be found suitable to those cases in which the morbid condition on which the disease depends is chiefly gastric. The sulphuret of arsenic appears in the long dreary list of diabetic remedies, and this drug probably owed its efficacy (if it had any) to the accidental arsenious oxide which it contained.

POISONING IN THE NORTH-WEST PROVINCES.

THE Chemical Examiner for the North-West Provinces, Oudh and the Central Provinces, sends in annually a report of the work done in his office. There are some points in the Report for 1869 to which we may usefully direct attention, as bearing upon the possibility of checking the criminal use of poisonous drugs in India. Of 277 cases investigated by the Chemical Examiner, 247 (89 per cent.) were cases of "poisoning or reputed poisoning in man or cattle; 21 of suspected stains of blood on weapons, clothes, &c.; 2 of opium adulteration; 2 of forged or altered deeds; 2 of suspected adulteration of wheat flour; one of the adulteration of soda-water by sulphuric acid; 1 of the sale of damaged rice; and 1 of the adulteration of bread."

Taking the human cases first, we find arsenic to have been the cause of death in the majority of cases. There can be no doubt that, all over India, this is the drug most frequently employed for homicidal purposes, and that restrictions upon the sale of a substance which combines so conveniently virulence with tastelessness, would be the means of saving many lives. There appears to have been nothing remarkable in the cases which came under observation during 1869; but in each of the two previous years, a case of accidental arsenical poisoning, by the use of sweetmeats colored with Scheele's Green (the Copper arsenite), occurred; unattended, however, by fatal results. Next to arsenic, dhatura was most commonly employed, and 22 deaths are attributed to this drug. Death resulting from the administration of dhatura is exceedingly rare in this part of India. It must be considered fortunate that this is so; for nothing can be done by preventive legislation in this case. One of the instances detailed in the Report may be

quoted as illustrative of the usual procedure in dhatura poisoning.

"Three men and a boy were travelling, last May, from Bombay towards the North-West Provinces. They were joined at Hurdah by a man, who ingratiated himself by pleasant companionship, and every day as they travelled, evinced his good-fellowship by making sherbet for the whole party during their mid-day rest. At length, at a solitary spot on the banks of a stream near Bansa, in the Dumoh District, they drank his sherbet for the last time. The three men were found dead, and the boy roaming about close to their bodies in the restless delirium caused by dhatura. A man said to have been the poisoner was apprehended soon after in the Hoshungabad District, and on him was found a carefully-made powder of dhatura seeds, mixed with a little flour and sugar. I detected dhatura in the stomachs of all the three victims of his heartless treachery."

Opium was used in four cases and aconite in three. The crime of cattle-poisoning is on the increase, we have reason to believe, in this Presidency: it would seem to be becoming very much more common in the North-West also, if we take the Chemical Examiner's figures as evidence. In 1867, he tells us, only one case of cattle poisoning came under his notice; in 1868, only five; while in 1869, the number was "117, or 42·2 per cent. of the whole number of cases referred." This apparent increase is partly due, no doubt, to increased zeal on the part of the Police, stimulated by a circular from the Inspector General, calling upon District Superintendents to pay more attention to cattle poisoning than they had been doing. Partly, too, the discovery by the peasantry that a charge of poisoning their cattle was a handy means of getting a neighbour into trouble, increased the apparent number of cases, some of which were obviously and clumsily fabricated. The Examiner suggests, besides, that many deaths by epizootic disease would be attributed to poison once the possibility had been suggested. The fact remains, however, that in 89 out of the 117 cases, poison was found. It should be added, that in two cases only does death appear to

have resulted, and in but one of these were portions of the animal's viscera sent up for examination. The substances which were submitted to Dr. Walker were generally balls of flour mixed with arsenic and rolled up in leaves or grass. Arsenic was the poison invariably chosen, and it was present, the Chemical Examiner states, in sufficient quantity to cause the death of the animal if it had been swallowed. We regret that no information is given us as to what that quantity is, a point upon which we must confess our ignorance.

Before concluding, we must notice a remarkable instance of wholesale poisoning by the use of flour mixed with darnel seeds (*lolium temulentum*). The sepoys of a Ghoorka regiment suffered from vomiting, headache, and vertigo. Nothing extraneous could be detected in the sample of wheat-flour first sent for examination; but, the symptoms re-appearing two months subsequently, a second examination showed the presence of particles of the peculiar beard of the darnel seed. The plant grows with the wheat; so that the deleterious seed can be removed only by the use of a sieve, which retains the former, and allows the latter to pass through. Fatal results do not appear ever to attend the use of the adulterated grain.

It is to be regretted that reports similar to this are not supplied by the other Chemical Examiners in India, and published. In spite of Dr. Chever's valuable work, much yet remains to be done for Medical Jurisprudence in this country, and the records of the Chemical Examiners' Offices would yield much information which cannot be obtained elsewhere.

SALE OF POISONS IN IRELAND.

THE Bill for the regulation of the sale of poisons in Ireland, to which we called attention in a former number, reached a first reading in the House of Lords with some slight modifications. The control of the Schedule of Poisons has been transferred from the Apothecaries' Hall of Dublin to the King and Queen's College of Physicians in Ireland; and the preparations of prussic acid, of the cyanides and of atropine have been struck out of the list. We hope that India will not continue to lag behind all other civilized countries in this important matter. A little of the superfluous energy of our Madras legislators might well be diverted into this channel.

THE MADRAS MEDICAL FUND.

THE assets, liabilities and management of this Institution have been this day transferred to Government. In the Charity Branch there is a surplus of about £30,000, sufficient to increase all pensions of Widows and Orphans by 15 per cent. without endangering in any respect the stability of the Fund. It is hoped that Government will apply this money to the purpose indicated, as it would, unquestionably, have been so applied had the Subscribers retained the management in their own hands. It is hoped also that compensation for the loss of income to the Annuity Branch in consequence of the supply of new members having been cut off will be given in the form of extra Annuities—*Bis dat qui citó dat.*

REVIEWS.

A Guide to the Examination of the Urine, intended chiefly for Clinical Clerks and Students. By J. WICKHAM LEGG, M. D. Lond., M. R. C. P., Physician to the St. George, Hanover Square, Dispensary. Second Edition. London: H. K. LEWIS, 136, Gower St. 1870. 12mo., Pp. 90.

As the first edition of this little work was published in September 1869, and a second called for before six months had expired, some proof is afforded of its having, at the least, met an existing want. The book commences with a scheme for the examination of the urine, which, if followed, will ensure that no important indication to be obtained from that fluid has been overlooked. We then have a section on the physical characters of the urine and the apparatus necessary for its bedside investigation, followed by detailed instructions for ascertaining the presence of Albumen, Sugar, Bile, Urea, Uric Acid, Hippuric Acid, the Chlorides, Phosphates, and Sulphates. The author next describes how urinary sediments are to be examined, both chemically and microscopically, and as he passes under review Uric Acid, Urates, Oxalate of Lime, Phosphates, Cystin, Leucin and Tyrosin, Pus, Blood, Mucus and Epithelium, Renal Casts, Fungi and Spermatozoa, it will be seen that nothing is omitted. An appendix is added, in which is described the manner of estimating the urea, chlorides, phosphates, sugar, &c., by volumetric or other rapid analysis.

A short account of the *Clinical Import* of the different abnormal constituents of the urine is given at the end of each section. Of course, in a work limited in scope as this is, such accounts must necessarily be very succinct, but it appears to us that the author has particularly well summarized the clinical import of Albumen, Blood, and Renal Casts. Dr. Legg does not recommend Heller's simple method of testing for albumen, which consists in pouring a

little nitric acid into a test tube and allowing the urine to flow down upon the acid, so that the two fluids touch, but do not mix, and observing the film of coagulated albumen thus produced. He says this method is "open to many notorious fallacies and does not detect minute quantities." Our author prefers the following method. Fill a test-tube about two-thirds full of the urine, hold the lower end of the tube between the thumb and forefinger, and heat the upper layer of fluid over the flame of a lamp until it boils. Compare the boiled stratum with the cool layer by holding the tube against the light, and, if any cloudiness or opacity be seen, let a drop or two of dilute nitric acid flow down the side of the tube into the urine. If the cloud is permanent, it is due to albumen; if it disappears immediately, it is due to the earthy phosphates.

The instructions given in this little book are such as may be implicitly relied on to secure accuracy, and we consider that Dr. Legg's *Guide* will be found useful not only by the student, but also by the general practitioner. The small price (half-a-crown) at which it is published, places it within the reach of all, and we commend it to the notice of our readers.

Reports on the Progress of Practical and Scientific Medicine in Different Parts of the World. (For the year beginning June 1, 1868, *and ending June* 1, 1869*).* Edited by HORACE DOBELL, M.D., Senior Physician to the Royal Hospital for Diseases of the Chest, &c., &c. Assisted by numerous and distinguished Coadjutors. London: Longmans, Green, Reader and Dyer, 1870. Pp. 645.

BOOKS of this class, even when incomplete—and the best of them must necessarily be incomplete—are of great value to the practitioner. In these days, when, books and periodicals abound, and intellects are busy in invention and research, when every day brings forth some novelty which may prove serviceable or worthless, the professional man engaged in the wearying details of practice, unable to read the tenth part of what others write, or to test the tenth part of what he reads,

turns with pleasure to Retrospects and Reports. From them he learns what progress has been made, what discoveries have stood the test of time and experience, what facts have been established, what theories confirmed. Where, as in the work before us, the whole medical world is laid under contribution, and the practice of foreign countries, as well as our own, stated and illustrated, the advantage of such *résumés* is greatly increased. Our profession is less "insular"—more cosmopolitan—than the Church or the Bar, but even we (being after all no more than human) need an effort sometimes to resist a tendency to the feeling that England is the world, and that a theory or a practice which has not received the sanction of our metropolitan practitioners can have little to recommend it. Next to reading Continental and American professional periodicals, which is difficult anywhere, impossible in India, our most efficacious means of overcoming the narrowness of a particular school is the study, or at least the frequent reference to, works of this description. The volume before us is the first of a series, more imperfect, therefore, than its successors are likely to be; but it contains a vast amount of readily accessible imformation, and we recommend it and future volumes to our readers. The arrangement of countries and subjects is alphabetical, and a copious index renders reference to any particular subject easy. We propose to direct attention to those parts of the present volume which are most likely to be practically serviceable to those whose lot is cast in India: and we shall be glad if the specimens we select induce our readers to study the present and future reports for themselves.

After some valuable Tables from Squire's "Companion to the British Pharmacopœia," which are necessary in order to understand the weights and measures and thermometrical indications of foreign papers, AFRICA takes the lead by virtue of alphabetical precedency. Five pages only are devoted to this considerable portion of our planet, and these contain little more than excuses for being so few. Mr. Brown of Seymour (2,600 feet above sea-level) gives a sketch of his own case, in which severe hæmoptysis (not phthisical, so far as we can make out) appears to have been thoroughly cured by removal from England to South Africa. AMERICA, another tolerably large place, (which does not seem to include Paraguay or Newfoundland in Dr. Dobell's Geography) gets only 22 pages. In these,

however, we learn that a Society has lately been organized in New York for the express purpose of reporting annually on the progress of medicine. A paper on the Climatology of Consumption, by Dr. Mattocks of St. Paul, Minnesota, gives a valuable Table, compiled from the Census Returns of 1860, which shows the number of deaths by phthisis in each State of the Union. From this it appears that the disease diminishes from "moist East" to "dry West," and still more rapidly from cold North to warm South. "*Cold and moisture* combined develop consumption fearfully, where there is a predisposition, and without it in many instances; but break up as it were this deadly combination, and we remove the fangs of predisposition." The remainder of the section is devoted to a paper on the Progress of Laryngoscopy and Rhinoscopy, by Dr. Ruppaner of New York; who appears to have taken these two "scopies" under his special care and has written a work upon them.

Our interest in BIARRITZ is but feeble. We pause only to notice that Dr. Chapman met a case of diphtheria there once; which was relieved by "a few leeches, poulticing, &c., after steel, quinine, stimulants, good living, &c., had acted unfavorably;" and that pneumonia, as it appears in Biarritz, is invariably cured by leeches, blistering, poulticing, antimony, low diet, &c. Weather tables for Biarritz and Paw are given. CHINA is very poorly represented by a short report from Hankow: in which we learn that "leguminous substances supply the want of nitrogenous food," which is not remarkable, considering their composition: and that "Europeans with weak heads or sore bellies do badly" there. These infirmities are not conducive to success in any climate, so far as our experience goes. Mr. Porter Smith, M. B., London, who writes this happily short report, attributes the rarity of diabetes to the practice of opium-smoking, which is plausible.

Under the head of CLIMATE Dr. Madden contributes a valuable paper on change of climate in the treatment of chronic disease. His experience seems to have been extensive, comprehending residence in France, Italy, Spain, Portugal, Egypt, Algeria and Morocco; but this scarcely justifies him in confining himself to the results of his own observations, as he says he does. The subject is a most important one if, as is estimated, between 12,000 and 15,000 English valetudinarians, most of whom are phthisical, annually seek foreign climates to avoid their own dismal

winter. We fear, however, that little discrimination is exercised by physicians in selecting sanitaria, and that more mischief than good is often done by injudicious changes of climate. Dr. Madden's conclusions differ from those of other authorities in some respects. We can only afford to notice his remarks on Egypt, a country which might, we think, be turned to better account than it is by Indian invalids. As might be expected from the great extent of the country from North to South, it includes some widely different climates; and recommending a patient to "try Egypt" would be as vague a piece of advice as to "try a spa," without specifying the character of the water. Lower Egypt is warm, moist and unhealthy, and utterly unsuited for pulmonary invalids. The air at Alexandria is saturated with aqueous vapor; and fever, dysentery, diarrhœa and ophthalmia abound. Upper Egypt, on the contrary, is admirably suited for the winter residence of consumptive patients. Our readers will remember how the life of the late Lady Duff Gordon, was prolonged by this climate. Unfortunately, its remoteness and difficulty of access and its distance from the supplies and comforts of civilization place it beyond the reach of all but the wealthy—a class with whom Indian physicians in these days of a withering pagoda-tree have little to do. In Middle Egypt, taking Cairo as the type, we have a climate resembling that of Malaga, Hyères or Cannes. The hot season, with a mean temperature of 70°, extends from April to September, and is unsuited to invalids. The mean temperature of the winter months ranges from 55° in January to 71° in April. The coldest weather "is as genial as that of the latter part of spring in England," the thermometer rarely "falls to Zero [?32°] and the lowest temperature I have seen recorded was 37° in January." The diurnal range of temperature amounts sometimes to 30 degrees.

"For eight months in the year northerly winds prevail in Cairo and temper the otherwise intolerable heat of the summer season; these winds are also the most healthy. Southerly winds prevail from March to June, and one of these, known as the "khamsin" is a perfectly dry and scorching south wind laden with the fine sand of the desert, and it generally lasts for fifty days at a time. The thermometer at this time rises from 30 to 50 degrees, the air is said to be in a highly electrical condition, a feeling of languor and depression is produced, rendering any great exertion almost impossible; the lungs are irritated by the impalpablesand sus-

pended in the atmosphere; the lips are cracked by the parched air; and foreigners are generally thrown into a semi-feverish and irritable condition by it. No health-resort frequented by English patients has so dry a climate as Cairo; the number of rainy days observed annually seldom exceeds twelve, most of which occur in February. There is however a heavy dew-fall at night. The atmosphere is peculiarly dry and devoid of any free humidity. The difference between Alexandria and Cairo in this respect may be inferred from the fact that the atmosphere of the latter city contains 152 times less moisture than the former."

Phthisis and other scrofulous diseases prevail among the ill-fed, ill-clad, ill-housed poorer natives; but for consumptive invalids, with certain limitations, having the means of living comfortably, Cairo seems admirably suited for a winter residence. When a tendency to tubercular disease exists in the young, in the pre-tubercular stage of phthisis, and in many cases of the first stage of developed phthisis, Cairo will be found eminently useful; "but no patient in either the second or third stage of consumption should be sent to Egypt. For many other diseases in which a tonic climate is indicated, such as chronic catarrh and bronchitis with much expectoration, pulmonary emphysema, humoral asthma, and other chronic diseases of a similar type, it is well suited."

In the next section a good deal of evidence favorable to the treatment of phthisis and other wasting diseases with ether, etherized cod-liver oil, pancreatine and pancreatic emulsion is adduced, from different sources. Under DENMARK and SWEDEN, Dr. Rasmussen's Report contains much miscellaneous matter of considerable interest. A paper on the Contagiousness and Inoculability of Pulmonary Consumption is summarized: the author of which arrives at the conclusion that there is "not sufficient reason to deny" the contagious origin of some cases of phthisis; that such cases are very dangerous and acute; that the bed of a consumptive patient should not be occupied without disinfection, and that in general healthy persons should avoid proximity to the phthisical; and that in Denmark the disease is most prevalent during the warm season. It seems strange that the author has only been able to find four cases to "prove" the contagiousness of so common a disease. Only one of the four is given, in which "a perfectly healthy agriculturist" who married a woman in an advanced stage of phthisis, and slept with her *in a bed with hangings* until her death six months afterwards, became

affected by the disease and died of it. The author's experiments were on the whole unfavorable to the possibility of communicating tubercular disease by inoculation. In another paper the use of inhalations of steam in cases of croup, bronchial and laryngeal catarrh, pneumonia and capillary bronchitis, in early infancy, is advocated. In the two latter diseases, especially, it is stated that the mortality in the Children's hospital in Stockholm has been considerably reduced since this method of treatment was adopted. The apparatus seem complicated, but the inventor attaches great importance to the manner in which the vapor is generated and inhaled. The temperature is maintained generally at 25°·5 C. (78° F.), and the patient remains in the vapor-chamber until recovery begins. The child must be gradually brought to a ward of the ordinary temperature. We have little doubt ourselves of the efficacy of a hot atmosphere saturated with aqueous vapor in cases of croup and kindred diseases, but we think the means for the application of the remedy may be much simpler than those recommended in this paper.

The Editor contributes a short paper on FOOD, HEAT and MOTION, to which is appended a valuable Table giving the composition and nutritive value of 20 articles of ordinary diet. He states that the "average man" requires for the maintenance of health four ounces of plastic materials, three ounces of fat, and ten ounces of carbo-hydrates, daily. This amount of food will supply 10,000 heat-units, of which 8,000 are expended in raising the temperature of the inspired air to the temperature of the body, in vaporizing the pulmonary halitus and in maintaining animal heat. The remaining 2,000 heat-units, the equivalent of 690 foot-tons, is devoted to work; more than half to "internal vital work (the mechanical work of the heart alone is equivalent to 200 foot-tons; respiratory and other vital movements may be estimated as equivalent to nearly 200 foot-tons more), leaving about 290 foot-tons available for external work, which may be represented by the labor of walking 16 miles; but of course only so much is available for actual walking, as is not used in the other external movements of the body, which we daily perform."

To be continued.

MEDICAL MISCELLANY.

Prussic Acid and Cyanide of Potassium.

(The following is the substance of a paper presented at the *Académie des Sciences* by M. Bonjean).

M. Bonjean draws the following conclusions from the four inquiries discussed in his paper.

1. The twelve animals which I poisoned with prussic acid or cyanide of potassium exhibited, with trifling differences, the same appearances before and after death. 2. The action of these poisons, once displayed, persists till death. 3. The animals were invariably restored to life once remission occurred in the symptoms. 4. Rigor mortis always set in about two hours after death, but warmth always continued beyond that period, and sometimes lasted eight hours. Thus the bodies remain warm after rigidity has been established. 5. Putrefaction does not appear to be retarded after poisoning with these substances. 6. Medicinal prussic acid exposed for 14 months on a window, in a white glass bottle simply corked, lost part of its poisonous properties, but still retained after that lapse of time a certain degree of energy. Some of the same acid retained all its strength after exposure for a year in a bottle protected from air and light. 7. Prussic acid and cyanide of potassium disappear *completely* under the influence of putrefaction; it ceases to be possible to detect traces of them after interment for a month, perhaps for less, even when *ten times* more of the poison than is necessary to cause death has been administered. This fact is readily explained by the powerful tendency of these substances to be rapidly converted into carbonates of ammonia and potash, and into formic acid, especially under the influence of the putrid fermentation. 8. It is even difficult, sometimes impossible, to establish *with certainty* such as justice has a right to demand, and even when the analysis is performed shortly after death, the presence of prussic acid or cyanide of potassium in animals which have taken no more than the fatal dose exactly. 9. From the examination which I have made of numerous natural substances containing prussic acid, and a retrospective review of the state of our knowledge of putrefaction, it must be admitted that prussic acid can and ought to be detected sometimes among the numerous and varied products which the putrid fermentation ori-

ginates.* 10. Animal matters distilled with water, at a moderate heat of 100° to 120°, may sometimes yield to analysis the *characteristic* reactions of prussic acid. We have seen that distilling in this way beef, cadaveric substances in a state of putrefaction, then ox-blood, I obtained, with salts of iron and copper, results *absolutely identical* with those produced for comparison, *by these same reagents*, in distilled water to which prussic acid had been added in the proportion of three drops to a hundred grams. In the two cases, the *apple-green* precipitate which the copper salt gives was of remarkably fine color.

We saw, moreover, in one of the distillations of which I have just spoken, that the *chestnut-red* precipitate was not formed until after more than a month's rest, from the liquid which held it in suspension in a state of extreme division. It is not desirable, therefore, to come to hasty conclusions, from one day to another, in medico-legal investigations, in which sometimes the *characteristic* appearances are so slow to develope themselves.

We see also how cautious the expert ought to be in a matter of this kind, in which it is possible, under certain circumstances not difficult of production, to obtain unequivocal traces of prussic acid, or at least of a cyanide, in cases where no crime has been committed; while this subtile and energetic poison cannot always be detected in subjects who have really succumbed to its action. Fortunately, in this latter case, the symptoms which preceded death, and the results of the autopsy, come in to the assistance of the magistrate, in enlightening his conscience and forming his conclusion.

If this unpretending paper does not contain the last word on this question of so much importance, it will undoubtedly be sufficient to throw some light upon this serious medico-legal and chemico-legal subject, and induce more skilful persons than I to repeat these experiments in order to confirm them in the interest of science and of justice.

We regret having seen only the conclusions of M. Bonjean's interesting paper. We might have found in the work itself new details and facts connected with the symptoms of poisoning by prussic acid or metallic cyanides, as well as with the anatomical lesions observed in the organs of the animals poisoned.

According to Professor Chevalier, "these symptoms are not yet clearly determined; they are variable, unless the quantity of acid is considerable; then the effect is like a thunderbolt; but it is

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* On the other hand M. Réveil says, "In opposition to what Orfila and other authors have stated, *neither hydrocyanate of ammonia nor any other poisonous substance separable by solvents or by distillation is formed during putrefaction.*"

very difficult to get accurate information of what happens, the rapidity with which death occurs not allowing the physician to observe symptoms in different cases. In the experiments which we have made upon animals, we have ascertained that some resist the lightning-like effect of the poison more than others : in our opinion experiments must still be made."

As regards *anatomical lesions*, the learned professor continues, "We know that most poisonous substances leave anatomical traces of their passage into the viscera : it is not so with the lower animals ; at least the observations which we have made have given us no specific information. It is said that the *rigor mortis*, the progress of putrefaction might afford some indication ; but the opinions expressed by Orfila, by Taylor and Casper being contradictory, there is still a question to be studied in order to verify the statements which have been made on this point."

According to Orfila, prussic acid acts upon the nervous system by producing tetanic paroxysms, with opisthotonos, which are followed by a state of the deepest coma. He puts forward the odor of bitter almonds as one of the most important signs obtainable from the autopsy.—*Jour. des. Con. Méd.*

On the Cause of Intermittent and Remittent Fevers.

In a very long and interesting paper, which, in these days of rampant germ-theories, will be read with great interest, Dr. Salisbury of Cleveland, Ohio, develops his theory of the cause of intermittent and remittent fevers. Conscious, he says, of the purely hypothetical character of all the theories hitherto formed in regard to the origin of these diseases, he was induced, by a long experience of camp diseases, of various forms of blight in plants, and of many inquiries into the causes of putrefaction, fermentation, gangrene, etc., as well as by a considerable acquaintance with the matters floating in the atmosphere, to investigate practically the cause of fevers assuming an intermittent type. In 1862, intermittent fever appeared during the month of May in the rich but marshy valleys of the Ohio and Mississippi, but assumed no great extension prior to July and August of the same year. Up to the 1st of July the weather was extremely wet, but during July, August and September, there was no rain at all, and an extreme aridity everywhere prevailed. Coincident with this aridity, intermittent fever increased and extended so rapidly as to leave scarcely one family unaffected throughout these marshy districts. Dr. S. commenced his investigation by examining the salivary and mucous secretion expectorated in the morning by those living in these districts plunged in a malarious atmosphere. In these he found a quantity of zoo-

sporoid cells, of animalcules, diatomes, desmidiæ, cells and filaments of algæ, and spores of fungi. But the only corpuscles uniformly found, and generally in great abundance, were small oblong cellules, isolated or agglomerated, which had a distinct nucleus, inclosed in a smooth cellular envelope, a clear space intervening between them. These characteristics at once convinced him that they were the cells of a species of alga, chiefly resembling the *Palmellæ.* While the other corpuscles were found at all and every elevation, these palmelloid cells were only found in malarious districts where fever prevailed. Dr. S. was then led to look for their source and characteristics. On suspending pieces of glass above marshy pools at night, removing them before sun rise next morning, their under surfaces were found covered with drops of water containing many cells similar to those found in the expectoration, but none of the above-mentioned oblong cellules, which, on the other hand, were always found in considerable number on the superior surface of the glass. On passing in the course of these inquiries over a rich prairie ground, recently dried and broken by the footprints of cattle, Dr. S. was sensible of a peculiar dry feverish sensation in the gullet, which sometimes extended to the pulmonary mucous membrane, and he discovered that on these occasions his expectoration uniformly contained numbers of the oblong cells already described. Thus attracted to those recently dried spots trampled by cattle, Dr. S. discovered on the recently exposed surfaces of the cracks a sort of grayish mould, and suspending his glasses over these spots he was delighted to find next morning that their under surfaces were now covered with numbers of the long-sought-for cells. Samples of the turf and fresh mould from these spots, when examined microscopically, showed that the incrustations with which they were covered consisted of aggregations of the cellules so constantly found in the expectoration of those living in marshy regions, and these were subsequently found to be algoid cells of the palmelloid type producing several varieties of mucedinous fungi. Various experiments proved, 1st, that cryptogamic spores chiefly rose into the air during the night, and fell shortly after sunrise ; 2d, that in the various districts examined 35 to 100 feet was the height to which these spores were carried ; 3d, that above the height to which these nocturnal exhalations attained there was no intermittent fever ; 4th, that during the day the air of miasmatic districts contained none of these palmelloid cells. Various experiments made by Dr. S. and his friends proved that a continuance of fifteen minutes or longer in these marshy spots was always followed by the almost immediate development of dryness and febrile heat in the throat, with a tendency to hawk and spit, which lasted for some time (two hours in one case) after leaving them ; and these symptoms were constantly accompanied by the presence of the

above-mentioned palmelloid cells in the expectoration. Dr. S. relates various cases showing that intermittent fever does not attack those who live at a certain elevation above the marshy ground, nor who live beside marshy places, unless the wind blow towards them over these spots; and he connects these facts with the occurrence of palmelloid vegetations by showing that, where the ground covered by this vegetation was strewn by his orders with quicklime or with straw to the depth of several inches, no palmelloid cells were detectable on glasses suspended above the soil, and fever ceased to be developed. Dr. S. also states that, where the soil is not calcareous and the water is soft, the palmellæ are white, or pale yellow, or green, and the fevers are less congestive, milder, and more amenable to treatment than they are where the soil is calcareous, the water hard, and the palmellæ of a deeper green or brick-red colour; in these latter districts the fevers are more congestive in character and less amenable to such remedies as quinine, arsenic, or iron, requiring them to be conjoined with diuretics, diaphoretics, expectorants, and alterants for their successful treatment. These latter eliminant remedies Dr S. is, from his peculiar theory, led to regard as of most importance as curatives of intermittent fever, while quinine, etc., he only regards as tonics of the ganglionic and other systems, fitted by their actions to prevent the development of subsidiary symptoms (the actual fever), while the sporular poison is being eliminated. His investigations lead him to believe that intermittent fever is caused by the development of these palmelloid spores in the body, the proof of which is their detection in the urine. And the most singular fact in connexion with this theory is the development of the symptoms of fever in the persons of those who were exposed to the inhalation of these palmelloid cells, far removed from their original source, and in districts not regarded as malarious. Of this Dr. S. gives several instances. The theory is ingenious; it adapts itself to present prevailing views and is supported by many remarkable statements, which, for want of further proof, we forbear to designate as facts. Gathered in America, these statements, if true, must be susceptible of proof elsewhere. Britain has many malarious soils, and many careful investigators, and her medical talent could not be better employed than by settling the nature and mode of origin of a disease which is the cause of so many deaths and of so much expense in attempts at cure. The paper from which this is quoted will be found *in extenso* in the *Révué des Cours Scientifiques de la France et de l'Etranger*, No. 49, 6 Nov. 1869.—*Edinburgh Medical Journal.*

Case of Mal-administration of Secale Cornutum.

Thérése, J., Æt. 20, unmarried, of Spanish descent, and very irritable temperament, was pregnant nearly nine months, when, eight days before delivery, she came suddenly face to face in the street with the man who had seduced her. This meeting caused her such emotion, that from that moment she no longer felt the movements of the child, which had previously been very distinct. On the 14th August, in the evening, pains set in, and Madame X., a well-known midwife of Toulouse, was sent for.

She, finding that labor was not progressing so rapidly as she wished, went home; and the next morning (15th), the os being scarcely as large as a five-franc piece, she could think of no better means of hastening delivery than to give a dose of ergot. Naturally, ergot, given to a primipara and at this stage of labor, could have no other effect than the suspension of expulsive contractions, and this occurred. A bath was then brought, under the pretext of softening the genitals, and the patient was kept in it as far as the frightful spasmodic pains of the belly, which prevented her resting for a single moment, allowed. Vomiting was added to her agitation and agony, but even this did not open the midwife's eyes. The latter, in fact, seeing that in spite of her efforts so *well-directed* labor had not made the slightest advance since morning, determined in the evening to give another dose of ergot. This new dose was followed by the same effects as before. Further fits of unconsciousness and syncope appeared during the night, which at last made Madame X. uneasy, not on account of her own conduct, but for the fate of her patient; and decided her finally to summon me on the morning of the 16th, requesting me to bring my forceps *(the dilatation being of the size of a five-franc piece.)*

After some of the customary explanations (which were rather confused) had been given by Madame X., as I was advising her very gently, and without uttering a word of reproach, (what good would it have been, with so hardened a sinner?) to be very cautious in the use of ergot, at any rate in the first stage of labor, she replied very quietly that she had often acted in that way, and that no harm had ever come of it. I should very much like to know whether her victims would say the same. In short, I examined the patient, whose general condition was pitiable. She was vomiting incessantly, and lay in a condition of complete exhaustion, from which she was only roused at intervals to utter heart-rending screams. The pulse was small, thready, the face shrunken and clammy, the skin cold. I began by having the patient warmed, and I tried to revive her with some broth and a little wine. I soon became certain that the child was dead. Not having, therefore, to consider its fate, I ordered a sedative draught, which

procured the patient a little sleep, and suspended almost entirely the vomiting as well as the pains. The latter re-appeared; decided, but with intervals, in the following night (16th-17th): dilatation went on normally, though very slowly; but there were scarcely any more of those frightful contractions which led me at one time to fear rupture of the uterus. The bag of waters broke towards 6 A. M., the head in the first position: some meconium was discharged at the same time. Near nine o'clock, I received the child, and I found the body flaccid, collapsing in whatever position I placed it; the epidermis was detached in several places, merely from the pressure of my hands, exposing the reddish moist and viscid dermis. The funis was withered, flabby, and already brown. This fact alone enabled me to attribute the death of the fœtus to its true cause, which was indubitably the violent emotion experienced by the young mother eight days previously.—*(Gazette Médico-Chirurgicale de Toulouse.)*

Carbolic Acid Plaster.

Joseph Hirsh, M. D., of Chicago, Ill. (*The Pharmacist*), suggests the use of carbolic acid in a more portable form than the three shapes in which carbolic acid has been used, viz., that of carbolic oil, of carbolic lotion, and that of carbolic paste. For this purpose the carbolate of glycerine is recommended, which, with isinglass, forms an even, homogeneous mixture capable of being spread on cloth or paper in the same manner in which ordinary court-plaster is prepared. The presence of glycerine prevents the complete drying of the isinglass, and preserves it in that elastic, india-rubber like state, which prevents the escape of any carbolic acid.—*N. Y. Medical Record.*

Fifteen Cases of Prolapsed Funis.

M. Yarnall, M. D., St. Louis, Mo. (*The Medical Archives*), publishes a report of fifteen cases of prolapsus of the umbilical cord, occurring in the practice of Dr. T. L. Papin, of that city, in which reduction was effected by the postural treatment advocated by Prof. T. G. Thomas, viz., by placing the parturient woman on her elbows and knees, the chest being depressed as much as possible, and the pelvis elevated so as to cause the abdominal viscera, with the uterus and its contents, to gravitate as far as possible from the superior strait. In this position, the bulk of the prolapsed portion being held in the palm of the hand, the fingers and thumb extended, embracing the cord, it is, by gentle manipulation between the pains, gradually passed back within the womb and beyond the promontory

of the sacrum, and held in that position until the fœtal head becomes engaged in the superior strait, thus preventing a recurrence of the prolapse. The women is then gently placed on her left side, and delivered in the usual manner.

Of the fifteen cases, ten were born alive and did well; of the five remaining cases—all of whom died—one was from subsequent compression of the cord with the forceps, after the cord had been successfully returned; in another, the cord was completely severed with the same instruments; one died from the too free administration of ergot; and the remaining two were cases in which the children were in the transverse position, and no retaining of the cord was possible, as there was no engaging portion of the child to keep it up, and by the time the uterus was sufficiently dilated to turn and deliver, the children were dead.

In every case the cord was fully prolapsed, being in some entirely out of the vagina, and in several it was extraordinarily long and large.—*Ib.*

Banting's System a Cause of Bright's Disease.

Dr. Thomas Clemens, of Frankfort, reports three cases of his own, in which the patients had carried Banting-ism to an excess. So insidious was the invasion of the renal disorder, that when the patients first applied for medical aid the symptoms of Bright's disease fully developed were found in each instance. All the cases were fatal, and each was accompanied with a rapid and profound disarrangement of the whole system, associated with symptoms referred to the brain and cord. Dr. C. believes that a tendency to the disease is caused by the loss of the fat of the kidney, together with an excessive supply of albuminous material in the blood.—*Chemical Gazette.*

Discharge of Blood and Serum from the Ear as a Sign of Fracture of the Base of the Cranium.

During the discussion which followed the relation of a case of "Fracture of the Base of the Cranium," at the Société Impériale de Chirurgie, M. Trélat referred to the cases reported by MM. Ferry, Prescott Hewitt, and Morvan, in which bloody serum flowed from the ear without there being fracture of the base of the cranium. The lesion was either of the inferior wall of the auditory canal, or of the tympanum, or in the bones of the internal ear, the cavity of the cranium not being opened into. To autho-

rize the inference that a flow of serosity from the ear has its source in the cavity of the cranium, it is requisite, according to M. Trélat, that, first, this flow be not sudden, but that it follow, after a few days' interval, a discharge of blood; second, that it be of some considerable duration; third, that the fluid have the chemical characters and the peculiar reaction of the cephalorachidian liquid. Under these conditions a flow of serosity from the ear, said M. Trélat, is a veritable pathognomonic characteristic of fracture of the base of the cranium, while a simple flow of blood, not followed by a discharge of serosity, is not a pathognomonic sign.—*Boston Medical and Surgical Journal.*

Phlegmasia Dolens following an Abortion of Three Months.

A. F. Barnes, M.D. (*The Med. Archives*), mentions a case of abortion of three months, which occurred in a stout, robust woman, aged about 30 years. She was delivered of a three months' fœtus, but without the decidua, and, singularly, during the whole of this severe abortion, she did not lose a single drop of blood. Her aunt stated that on the second day she passed the after-birth. Its expulsion was attended with an ordinary loss of blood, and was followed by the usual lochial discharge. Thirteen days afterwards Drs. Whitehill and Barnes were summoned, on account of alarming hæmorrhage, which followed straining at stool, after taking four comp. cath. pills, and was arrested by the solution of persulphate of iron, applied by a pledget of lint. Phlegmasia dolens followed her troubles, about three weeks after the cessation of the hæmorrhage.

The case presents several interesting points. It is the first case of abortion at three months he has ever met with, in which there was an entire absence of hæmorrhage.

He never before witnessed such frightful and recurrent hæmorrhage, after the establishment of comparative convalescence, without some more exciting or provoking cause than an ordinary cathartic.

The hæmorrhage was attributed to the very relaxed condition of the uterus, during the engorgement of the parts incident to the severe straining induced by the action of the cathartic. He has never before known phlegmasia dolens to follow an abortion at three months. Ramsbotham says of it: "It is said to have followed an abortion, though I have myself never seen a well marked instance of such an occurrence." Dewees, in his great experience, met with but two cases of it.

An Informal Method of Reducing Backward Dislocations of the Elbow-joint.

Dr. W. H. D'Camb recommends the following manipulation in backward dislocation of the elbow-joint: The wrist is clasped by one hand, while the other is placed back of the elbow, and the effort made to flex the arm in the wrong or backward direction, at the same time moderately pulling upon the wrist, when the bones are found readily to resume their normal position; the work being performed in far less time than it takes to describe it. By this method the coronoid process is not drawn directly into the olecranon depression as it is by pulling in the straight line, as sometimes recommended; but is lifted out of, or over it, with no more strain upon the ligaments than is required to let it pass out of its normal place.—*Detroit Rev. of Med. and Pharm.*

Remarkable Instance of Burns from Lightning.

Wm. M. Holton, M.D., of New Harmony, Indiana, *(Am. Jour. of Med. Sciences)* publishes the following remarkable case of burns from lightning: On the 25th of March, 1868, he was called to see a married woman, aged 61, who had been for some months subject to indigestion, vertigo, and numbness of the limbs, which impeded walking, and interfered with the performance of her domestic duties, and who had been, 35 minutes before he saw her, struck by lightning, while she was in an out-building. The lightning struck and shattered a tree about one foot distant; then leaving the tree about seven feet from the ground, penetrated the wall of the building, and splitting a corner-post struck Mrs. P. on the back of the head, where her hair was "done up" in a knot and fastened by two wire hair-pins. The hair was much scorched, and under the knot of hair the skin was severely burned. Thence the electric fluid passed down, burning the lower portion of the right ear, in which was a gold earring; then crossed the throat and passed down to the left of the sternum. The burn thus produced was about three inches wide, covered with blisters. The fluid here left her body, and finding some other conductor passed down, still on the left side, to just above the crest of the ilium, extending thence forward and backward to the symphysis pubis. This burn was about 12 inches long, and about the same width as the first. The next burn began on the patella of the right knee, extending to the bottom of the heel, in reaching which it wound around the inner side of the leg. The lightning passed off at the bottom of the heel, bursting open the heel-seam of a strongly sewed gaiter boot.

Her husband found her a few minutes after the accident, lying on the floor, insensible, but occasionally uttering a groan. Brandy was administered, and her pulse soon rallied ; the profuse perspiration diminished, and she became more comfortable. Subsequently her wounds were treated like ordinary burns, with carron oil—equal parts of linseed oil and lime water—which proved a very soothing and cooling application. Her wounds are now cured ; her appetite is pretty good, and she is quite cheerful, except when left alone, when she is disposed to sleep too much. A feeling of great lassitude announces to her the approach of a thunder-storm before its coming is perceived by others.

Dr. H. had hoped that the shock she experienced at the time of the accident might relieve her to some extent of the numbness of which she had previously complained, but these hopes have not been realized, the numbness having increased rather than diminished. The lightning melted portions of the wires of her hoop-skirt, also a small part of the lower end of the steel of her corset. The steel clasp of the elastic garter, the steel of her corset, and the metal of her hoop-skirt, appear at several points to have carried off the electric fluid. Had the wound been continuous from head to foot, a fatal result would have been inevitable.

Extirpation of the Uterus for Complete Prolapse.

Prof. Langenbeck, of Hanover, has recently performed this operation upon a woman 48 years of age, who had suffered from prolapse since the birth of her first child, eighteen years previous. She had borne nine children since then. The result was a good one. The patient removed the ligatures herself from the eighth to the tenth days. The operation was performed on the 15th of May ; on the 29th she left her bed ; and on the 31st she took her first walk in the open air.—*Memorabilien.*

Notes from Japan. By H. Ernest Schmid, M. D.,

WHITE PLAINS, N. Y.

The Japanese, like all Eastern people, who live mostly on rice, are much troubled with flatulence. In fact, many forms of dyspepsia are of frequent occurrence amongst them. It could scarcely be otherwise, considering, as already mentioned, the extensive consumption of confectioneries, and the universal love for strong drink. I have heard from respectable, reliable Japanese themselves, that many people in Nagasaki consume nightly from six to eight pints

of saki. It is no wonder then, that, after a daily exposure of their unprotected heads to as fiery a sun as ever heats up the tropics, and after nightly excesses in drinking, and in sexual pleasures to the utmost, so many cases should come under notice of apoplexy and paralysis, of valvular lesions of the heart, and of renal and hepatic disorders, with their attendant dropsical affections. I had to perform paracentesis abdominis many times during my residence in Japan, for ascites appeared more frequently even than general dropsy amongst my class of patients. Although this tapping is in most cases only a palliative measure, I was fortunate enough in one single instance to accomplish a perfect and permanent cure by the operation. This occurred in the person of a young woman, 28 years old, married and mother of three children. She had consulted, prior to her coming to my clinic, the learned physician, Dr. Baron von Siebold, well known as the most prominent of medical men attached to the Dutch factory on Desima, during the time that nation had sole monopoly of the Japanese trade. He had decided that nothing short of paracentesis abdominis would be of any benefit to her. But she was unwilling to submit to the operation, and came to me to see if nothing else besides the dreaded surgical means could be employed in her behalf.

The woman was, like all Japanese of her sex, of small stature, and of that early faded appearance which is the almost constant result of their mode of life. She had had, as I was justified to conclude from her answers to my minute inquiries, about 18 months previously, an attack of hepatitis, which had left her with a dull dragging pain in the region of the liver, but which pain was, when I first saw her, much obscured by the general feeling of the distension and weight of the accumulation within her abdomen. For the ast twelve months the upper part of her body and her limbs became very thin, as is usual in ascites.

There was now general lassitude, dry skin, dizziness and headache, much thirst, rather darkly furred tongue, loss of appetite, and obstinate constipation. Her spirits were greatly depressed. No jaundice was present—her pulse natural—her menses regular though scanty, her urine less than natural and loaded with bile, it turning green on addition of nitric acid. There was *no* anasarca—no evidence of disease of the kidneys—no cardiac complication. Hepatic derangement was evident, so that I at once examined her liver. It was considerably enlarged, although to ascertain the extent of the hypertrophy was difficult, on account of the great distension of the abdominal cavity. I greatly inclined to Dr. von Siebold's views of the case, expecting little from general treatment, without paracentesis, because the national lymphatic temperament made me fear a failure in any attempt to excite the absorbent power of the peritoneum. Yet since she wished it I put her at first on repeated moderate doses of soda-salts. It proving useless, as did

likewise the employment of calomel, I gave her elaterium, and kept her abdomen well compressed. This acted at last powerfully, and lessened her circumference markedly in a short time. But it debilitated her likewise very much. At this time, she received news of the impending death of a member of her family, which induced her to beg me to dismiss her, that she might go back to her home, distant some 200 miles, from whence she would return to me as soon as her family affairs would permit. This was in the winter, and I bade her farewell, expecting never to see her again. But to my surprise, in the early spring-time she came back true to her promise. She was now more miserable than ever, the distension of her abdomen having assumed an enormous extent. She was ready for the operation, preferring it to a repetition of *drastic purges*, which had prostrated her so very much. I tapped her, as is mostly done, half way between the symphysis pubis and umbilicus, and drew off under continuously tightening compression of the abdomen eleven gallons of a somewhat viscid, slightly, but very slightly, yellowish serum. She evinced great cheerfulness as her size more and more diminished. I put large compresses over her bowels and bandaged her very tightly. Although my experience had shown me the rare danger of supervening inflammation in these Eastern people, I yet gave her a grain of opium, which was repeated a few times during the first three days. No untoward symptoms set in. On the third day a powder of calomel and rhubarb acted surprisingly well. I then put her on small doses of the bichloride of mercury in fluid extract of taraxacum and comp. tinct. of gentian; had an ointment of the iodide of mercury rubbed into the skin of the hepatic region; and kept her bowels well open with the compound rhubarb pill. She was taken daily in an open boat on the waters of the beautiful bay of Nagasaki, and recovered so fast, that when she came to my house, up a flight of two hundred steps, some eight weeks after the operation, to bid me farewell, before returning to her native princedom, I scarcely recognized her, who had regained almost entirely the beautifully moulded round limbs, which constitute the great charm in the figure of the Japanese maiden. For a year afterwards I heard from her every two months, and the last report was still of her continuously good health.

To give an idea of the financial prospects of Japanese doctors, I mention here, that on this dropsical patient's first return to her country, when she had been under my treatment for several months, the grateful husband left on my study-table five itchibues, silver coins, three of which were given for a Mexican dollar. This was considered an extraordinary fee. I returned it to him.

In the treatment of Bright's disease, I employed largely the sulphite of lime, and with very satisfactory results. It invariably increased the amount of urine, so that it gave often at least tem-

porary relief in removing the oppressing dropsical effusions. In one very far advanced case, that of a young man, it produced a complete cure, and in a woman 43 years of age it procured apparent recovery for about four months, when the disease returned in new force and killed her very rapidly. I was induced to prescribe it as a catalytic, looking upon the state of the blood in albuminuria as one needing a remedy of catalytic power. Whether it acts as such, or simply as a diuretic, I do not know.

Venereal diseases play a great rôle in Japan. The licentiousness of that country is unsurpassed by any other. The houses of prostitution, protected by government, flourish. Their inmates are not the pariahs of our cities, but frequent as visitors the most respectable houses. When they reach the age of twenty-five the brothel-keepers can no longer retain them, but must dismiss them from their houses. They have then most probably accumulated a small sum of money and are ready to enter the matrimonial estate. And they find husbands.

It is evident how easily, in such state of things, venereal diseases are widely disseminated. Syphilis, almost wholly unchecked in its primary stage, saturates the system so thoroughly, that its ravages in the tertiary forms are beyond all description. And it also gives taint to so many general diseases, that I was forced to this position, that whenever a case came nto my hands defying all rational treatment, I would feel justifiable to give it *specific* medication, and in 99 cases out of 100 with success. I can safely say that amongst a number of about 100 patients that came daily to my house, there were generally some twenty syphilitic cases of all shades.

Disease of the eyes are also very common. The causes we find again in the food used, and in that they protect their eyes very little from the direct rays of the sun ; nay worse, that they actually deprive themselves of their limited natural protection by shaving off the eyebrows. One of Dr. von Siebold's native pupils invented an instrument for steadying the eyeball during the operation for cataract. It was in the shape of a pair of spectacles, having in the place of the glasses two half spheres, which fitted accurately and tightly over the globe of the eye, but had cut out of them a round piece, corresponding to a little more than the size of the cornea. It answered a very good purpose in operations per cornea.

Two terrible cases of extensive burns came into my hands during my practice in Nagasaki. The first in a common laborer who was engaged in boiling pitch in a large cauldron, to be used in the caulking of a schooner. By some mishap the huge vessel was upset and the boiling pitch ran over the top of the head, part of the right side of the face, right arm, right side of the body, right thigh, and over a part of the scrotum and left thigh, and over portions of both legs. By placing by the bedside of the sufferer nurses who by

night and day kept the burns covered with an ointment made of linseed oil and carbonate of lead, spread over in its turn with a layer of oakum, and by controlling the nervous system and preventing trouble in the duodenum with the free use of opiates, recovery took place very rapidly and with a very small amount of suppuration.

The same happy result was gained in the second case, where 75 pounds of powder had exploded while lying right before the chief of artillery of the learned Prince of Shisen. This officer was seated on the ground by the powder, with which he was about to make some experiments. The accident happened at the capital of the province of Shisen, a territory never yet trodden on by foreigner's feet. The victim of the disaster was a great favorite with his princely master, hence runners were despatched at once to me in Nagasaki, to ask my assistance for the sufferer, the story of the extraordinary recovery of the just mentioned case having spread abroad into the provinces. I hoped and fervently wished that this might be made the means of my visiting the capital of the great Shisen, and therefore stated that it was decidedly necessary that I should see the patient. But though the Prince prized him above all others, and would spend treasures in his recovery, he nevertheless replied at once, that if I could not prescribe for him where I was, the man would have to live or die without my assistance. The law and custom forbade my going to him—that was enough to stop all love, and friendship, and princely favor. Of course, when I saw the hopelessness of my darling desire, I came to terms, that is, I prepared a large jar of the above lead-ointment, and sent it off by runners stationed at three-mile distances from each other. Recovery also took place, but with the almost entire loss of eyesight, contraction of right knee-joint, and of the fingers of the left hand and two of the right. He visited me afterwards, so that I could trace the extent of his burns by the scars.

Variola was not known in Japan up to the year 736. At that time a man from Chikusen was shipwrecked on the coast of Tartary, and, in spite of seemingly certain destruction, reached terra firma in safety. There he remained but a short time, soon finding a vessel that would take him back to his own country. But he had stayed long enough to carry with him a dread disease, variola, the seeds of which lay dormant in his system until he reached home, when he fell sick with it and became a centre of contagion to all around him. It spread from him over the island, and finally became a terror to the whole empire.

The priests of Shintoo, which was the oldest established religion, used it as a powerful weapon to fight the entrance into Japan of a new faith, that of Buddha. They proclaimed that this plague, variola, had been sent upon the people by the Gods, because all were leaving their old religion to embrace this new doctrine.

It is a fact, carrying with itself golden hopes for the success of

Christian missions amongst that nation, that not even the dread of so terrible a disease could stop the progress of Buddhism, a faith better than any up to that time embraced by the Japanese. They were ever a very religious people, and in all the changes they made in their forms of worship, never left an old creed except to adopt a better one. Improvement marked every revolution in their devotional history. So when variola spread they made Buddhism spread but the faster, and only endeavored to limit the ravages of the loathsome disorder by isolating it. After a time they sent all new cases into the mountains, there to be nursed by the convalescents. Curious enough, in the year 1862, there was still an island, distant from Nagasaki some 90 miles, where never yet a case of variola had occurred.

Vaccination has been practised in Japan for the last 30 years. It was introduced by the Dutch. The place selected by the natives for vaccinating is the inside of either nostril.

Another, and of course still more dreaded epidemic is of very recent date in that empire—I mean that of the Asiatic cholera. It made its very first appearance in Japan in 1858, reappearing in the following year. In 1858 the rainy season had been one of unusual length. After it the sun came from behind the clouds with so fierce a heat that it fairly boiled the wet, spongy earthcrust, and set free its poisonous constituents of all kinds. At that time broke out the cholera. Its victims fell in countless numbers. A native physician, a man of uncommon intelligence, whom I had trained to be my assistant, treated this new visitor altogether with emetics. He saw and prescribed for some 600 cases, and, so he told me, lost only 40 of that large number. But when it reappeared in 1859, the emetic plan did not answer in a single case, and he had to resort to promiscuous remedies, his success being as nothing in comparison with that of the preceding season.

But I have not yet mentioned that which is really par excellence the disease of Nagasaki. It is the typhoid fever. Endemic in Nagasaki—one can safely say of it, that it destroys yearly more human lives in that city than any other single malady. For though occurring so commonly it is, notwithstanding, less comprehended and more maltreated by native doctors of medicine than any other sickness. And yet I have never met before or afterwards in any other place a form of it so amenable to treatment as that of Nagasaki. As a specimen of the native plan of treating it I would only mention that I have seen native physicians hail the occurrence of hæmorrhage from the bowels as a good sign, and give powerful cathartics at that time, to aid the system in relieving itself of what they called these poisonous excretions.

The knowledge of medicine the Japanese possess, comes to them from the medical works of their Chinese neighbours. And small is the amount of sensible ideas that can be found amongst the moun-

tains of absurdities contained in Chinese writings of that kind. However, the Japanese have taken many useful lessons from observing the practice of the Dutch physicians attached during 300 years to the Dutch factory on Desima. Still more have they learned from translations of Dutch medical books into their own language. Of course almost all the scraps of European medical knowledge thus obtained are with them of an empirical character—of the routine kind. And even this, little as it is, has fouud its way only to the better class of physicians. I may be allowed to state here a somewhat foreign matter, but at a time when female doctors make so much furore, it will be of sufficient interest. I mentioned above the name of Dr. Siebold, the Japan savan. He had a daughter by a Japanese woman. This daughter, growing up beneath the roof of her European father, became very fond of the parent's profession, and induced the doctor to instruct her frequently in medical topics. She was an apt scholar, who remembered well what she read, and still better what she saw, so that in after years she became greatly esteemed by her countrymen for her medical lore, and grew to be, to all intents and purposes, the first and only female doctor of medicine in Nagasaki.

Amongst Japanese physicians a great many grades of standing and respectability exist, and it is evident that the more one of them has gathered in of European medical science, the higher he ranks with the people and with his own confrères. It is in accordance with this statement, that the highest and most respected class of medicine-men is the one comprising all such as have gained knowledge by observing intelligently in person the treatment employed by foreign physicians, or who have been taught through foreign books, or who have actually been pupils of foreigners. Some few of these have even dissected a very little.

I instructed a class of sixteen native doctors, the best of whom was the above-mentioned successful manager of so many cholera-cases. He is now the largest practitioner in Nagasaki, his known relations with me having procured him the finest reputation in that community. For it was easy to become Cæsar amongst my heathen-friends, where there was no rival beyond a single Dutch naval surgeon. And in fact we did not oppose each other, but had each our separate empire—and were both of us *great* men.

After the highest grade of Doctors are met all kinds of ignorant specialists, or I should rather say, every variety of such as profess to cure all human ills by one treatment. Such are, for instance, the moxa-men and the acupuncture-men.

The surgeons form also a second-rate class. They confine themselves to opening of abscesses and setting of fractured bones. They make their splints of the elastic bamboo, a most excellent material for such purpose. But they do not give the necessary length to

them, and therefore procure in many instances only ligamentous union of the fracture ends or no union at all.

But the lowest and most disgusting in the scale of medical attainments are the obstetricians. These go about at night with their lantern-carriers, who cry out upon the streets: "Here comes the celebrated obstetrician, Skeshiro-sama," or whatever his name might be, "all ye that want him come out of your houses and avail yourselves of his inestimable services!" This class is held in low esteem even by the people themselves. They deliver their patients in the knee and elbow position, as it is called by the Germans, squatting behind the woman to receive the child.

In conclusion, I would add only this, that in Japan mothers nurse their children until their milk dries up. And I have often seen little ones of three, four, and five years of age step up to their mother and take a drink from her breast. The fact that the use of cow's milk or that of any other of the lower animals, is unknown in Japan, has a great deal to do with this custom. But it is a bad custom, for it is certainly one of the several causes that make Japanese women fade so early. And this early decay strikes the foreign visitor all the more, since the Japanese women have as free intercourse with general society as their European sisters have. This is only one more of the many points on which rest the speculations of those who prophesy for Japan a great future, a future that will see them the Anglo-Saxons of the Eastern nations.—*N. Y. Med, Rec.*

Sea Sickness (from report of a Meeting of N. Y. Medical Journal Association.)

Dr. Fordyce Barker, in a paper upon *Sea Sickness*, began his discussion of this affection by a rapid review of the various theories that have been held concerning it. Semanas charged it to miasma generated in the confined air of the ship; but it was suffered equally in open boats. Darwin thought it occasioned by the sight of objects always in motion; but the blind were no more exempt from it than the seeing. Keransaen regarded it as resulting from an agitation of the abdominal viscera; but riding, jumping, gymnastics produced no such result. Wollaston considered it due to vascular engorgement of the brain, mechanically produced; but the symptoms of sea-sickness were quite different from those of congestion. Bellarin held that the sudden movements of the body decreased the ascending force of the blood, resulting in sudden anæmia of the brain; this, through the sympathetic system, excited vomiting, which refilled the cerebral vessels. Sper, Gilchrist, Marsh, and Fonsagrives ascribed sea-sickness to cerebral commotion from oscillation. A. Jobert looked upon it as an indigestion produced by

physical interference with the peristaltic action of the stomach. Chapman, whose claim to cure the malady by the application of ice-bags to the spine had drawn attention to his views, held that its proximate cause was congestion of the nervous centres along the back, especially in those segments of the cord related to the stomach and the muscles concerned in vomiting; this congestion being due to the slight concussions of the brain against the base and roof of the skull, in the alternate rise and fall of the body; to the slight jerks, similarly produced, upon the lateral ligaments suspending the spinal cord; and to the more or less violent movements of the abdominal and pelvic viscera.

Some of the above theories the speaker deemed misty and obscure, others fanciful and absurd, others again positively false, and none satisfactory. His own view, which he stated with modesty, was that sea-sickness is "due to the sudden and recurring changes of the relations of the fluids to the solids of the body, and the nervous disturbances which result from these changes." The alternate movements of ascent and descent produce "alternations of afflux and delay in the arrival of the blood to the different organs of the body, which disturb their functions, and those of the brain especially," with results analogous to the nausea and vomiting which some persons experience after venesection.

Persons differ greatly in the symptoms of sea-sickness, as well as in the susceptibility to it; and the same is true of the lower animals, which are also subject to the malady. With some persons headache is the prominent symptom; with others, intense nausea; with others still, simple vomiting without nausea or other distress. With most, their troubles cease after a few days, but some unfortunates can never become accustomed to the sea. Even in the worst cases, a strong mental emotion, such as terror, will often effect a sudden respite, if not a cure.

It is a popular error that sea-sickness is often beneficial, and never permanently injurious. Of itself, it is probably almost never helpful, and the benefit from a voyage is commonly in proportion to the freedom from sea-sickness. That it may result in serious and permanent injury, there is no question; and, though rarely fatal, yet more deaths are to be charged to it than might be supposed. The speaker had met with three in his own experience.

There are no specifics for sea-sickness; the land is the only sure prophylactic, and the horizontal posture the nearest approach to a cure. But though drugs are useless, hygiene may do much towards averting the evil or mitigating its worst features. These are often due to previous exhaustion, from the fatigue of travel, with bad ventilation and want of regular sleep and food; or from the excitement incident to preparations for departure. And frequently this exhaustion is aggravated by a violent cathartic, taken to clear out

the bile, that is supposed to be responsible for all the suffering—how absurdly need not be said. Select, then, a well-ventilated state-room on the sunny side of the steamer, as central as possible, but away from the furnaces. Have all preparations made so as to secure a full day's rest before starting. Eat as hearty a meal as possible within two or three hours before going on board. Be early enough aboard, to arrange everything that may be required for a day or two ; *go to bed before the vessel gets under weigh*; and stay there a day or two, or until you feel that the danger of sickness is past. Eat regularly and heartily, but *without raising the head.* On the first night out take some mild laxative, such as two or three compound rhubarb pills, to obviate the constipation to which most persons are liable at sea. (But avoid cathartics before starting. Effervescing laxatives in the morning are bad in this affection.) After having become accustomed to the sea and able to be out on deck, never rise in the morning until you have eaten something, as a bowl of porridge or a sea biscuit, with a cup of coffee. Lastly, if rough weather comes on, don't attempt to brave it, but go to bed before getting sick.

Dr. Post had found closing the eyes give great relief.

Dr. Doremus had seen a lot of wild animals suffer from sea-sickness, and Dr. Messenger had seen fowls die from it. Both gentlemen endorsed Dr. Barker's rules, as did also Dr. Garrish, who was fond of iced champagne.

With regard to the effect of Chapman's ice-bags, Dr. Barker had made particular inquiries in England and France of many physicians and others who had used them, and found the bulk of testimony against their value. Some deemed them not only useless, but harmful, from causing nervous depression. He inquired if any one present had seen fatal results from sea-sickness.

Dr. Farnham had seen one case fatal, and another very nearly so.

Dr. Messenger had, in one case, attributed death to this cause.

Dr. Keyes, Elliot, Carroll, Neftel, and Beard joined in the discussion.—*N. Y. Med. Rec.*

Bromide of Potassium in large doses.

Dr. Wm. A. Hammond read a paper upon *Some Effects of the Bromide of Potassium in Large Doses* (*Psychol. Jour.*, No. 7, Jan. 1869), relating several cases, and dwelling especially upon the mental aberrations, chiefly melancholic, sometimes produced by the drug. These were always temporary, and ceased on stopping the

medicine or reducing the dose. The symptoms following large doses (*e.g.*, half a drachm to a drachm and upwards thrice a day) were commonly, in order of occurrence: 1. Contraction of pupils (an important index of cerebral anæmia); 2. Drowsiness; 3. Weakness of arms and legs; 4. Depression of mind; 5. Failure of memory; and, 6. Delusions. Some persons seemed almost completely to lack susceptibility to the medicine.

Dr. McCready thought the effects described by Dr. Hammond must be rare, as he had often given similar doses without observing them; and Reynolds, with his immense experience of the drug in epilepsy, spoke of it as deranging none of the functions. Its power to allay excitement was certainly marvellous, and particularly in the condition just preceding delirium tremens. The fully developed delirium would not yield to it.

Dr. L. Weber had not seen the peculiar effects related. He had found the bromide invaluable in the convulsions of children, as well as in other cases of abnormal reflex irritability.

Dr. Parsons had not found mental aberration produced by large doses. He had given it in acute mania, he thought with advantage. In the case of a lady, thirty years of age, with recurrent mania, who would have lucid periods of three or four weeks, and then three or four days of marked excitability, the bromide was given in drachm doses, morning and night, with no benefit. The dose was then doubled, and the case finally cured. Another case related was that of an insane woman, who had, three or four months before, had paralysis of the right side, which the doctor took to be of purely nervous origin, and not dependent on effusion. She was still subject, from time to time, to epileptiform seizures, attended by a recurrence of the hemiplegia, which would continue for three or four days and then pass off. There was at these times almost complete anæsthesia of the affected side, with blueness of skin and a diminution of about two degrees in temperature. The tremulousness was such as to prevent sleep. During the last attack ten grains of the bromide were given, and in about an hour the trembling ceased, and heat and sensation returned.

Dr. Hammond explained that he had brought these cases forward as remarkable instances, of which he had met with only some half-a-dozen, although he gave the bromide oftener than any other medicine.

Dr. Elliot related a case of congenital hydrocephalus, in a child three months old, at Bellevue Hospital. The head was greatly distended and still rapidly enlarging, having gained two inches in as many weeks. Strabismus was beginning to show itself, and the prospects for the child were most unfavorable. Under these conditions, the head was tapped by means of the needle of an ordinary hypodermic syringe, hugging the inner part of the upper angle of

the left frontal bone. Four ounces of fluid were taken, and the trocar withdrawn. During the flow the strabismus disappeared. The child cried well, and seemed not at all depressed. Strapping was not resorted to. Drowsiness afterwards setting in, with feverishness and a temperature of 101° and 102° F., meningitis was feared. Twenty-four grains of the bromide were given in twenty-four hours, and the fever vanished; when the amount was diminished to twelve grains daily. In the three weeks that had since elapsed, the head had not regained its former size; but it was slowly enlarging, and another tapping might be required.

The speaker heartily endorsed the efficacy of the bromide in infantile convulsions.

Dr. Neftel read a brief communication on the *Ætiology of Vaginismus* (Med. Record, vol. iii., p. 433), attributing this affection, in many cases, to lead-poisoning.

Dr. Carroll referred to the frequent cases of lead-poisoning by "Laird's Bloom of Youth." Out of sixteen cosmetics which he had analyzed, but two did not contain lead.

Dr. Le Coniat was introduced, by Dr. Hammond, as a distinguished surgeon of the French Navy, who had given special attention to the perfection of a *method of curing sea-sickness*. As the doctor did not speak English, Dr. Dwinelle gave an account of the relief he had himself obtained at his hands, and of other aggravated cases which he had seen completely cured. The doctor trusted his method as implicitly as he did quinine in intermittent fever, and expected to cure ninety or ninety-five per cent. of his cases. It consisted in the faradization of the epigastric region, and in the local application of a one-grain solution of atropia in severe cases. The native electrode was a metal disc placed over the pylorus; the positive, a moist sponge, passed over the surface from the cardiac to the pyloric orifice. By invitation of the President, Dr. Le Coniat afterwards addressed the Association in his own language.—*Ib.*

Cincho-Quinine.

Jas. R. Nichols & Co., Chemists, Boston, acting upon the idea that the natural alkaloidal principles of bark, in their simple unchanged condition, separated from the gross woody and other matters, would better subserve all therapeutical ends than themselves, or *any one* of the alkaloids separately employed, have prepared Cincho-Quinine. It contains no external agents, as sugar, licorice, starch, magnesia, etc. *It is wholly composed of the bark alkaloids.* 1st, quinia; 2nd, cinchonia; 3d, quinidia; 4th, cinchonidia; 5th

other alkaloidal principles present in bark, which have not been distinctly isolated. In the beautiful white amorphous scales of cincho-quinine the whole of the active febrifuge and tonic principles of the cinchona barks are secured without the inert, bulky lignin, gum, etc. It is believed to have these advantages over sulphate of quinine:

First. It exerts the full therapeutic influence of sulphate of quinine in the same doses, without oppressing the stomach, or creating nausea.

Second. It has the great advantage of being nearly tasteless. The bitter is very slight.

Third. It is less costly than sulphate of quinine.

Fourth. It meets indications not met by that salt.

Formulæ and Methods of using Cincho-Quinine.—A perfectly clear solution of *Cincho-Quinine* may be made by taking 10 grains, rubbing it fine in a mortar, and gradually adding 2 fluid ounces of water, in which are dissolved 30 drops of No. 8 acetic acid, or 6 drops of sulphuric acid. The solution is not disagreeably bitter, and a pleasant elixir may be made from the solution by adding syrup and aromatic flavors.

Cincho-Quinine Pills.

℞. Cincho-Quinine (finely powdered).....xx gr.
Acid. sulph. aromat. (Elix. Vit.).....xx gtt.
Fiat pil. xx.

Mix, and rub in mortar until it becomes hard enough to form into pills. The mixture is at first quite liquid, but it soon hardens, and pills can be readily formed from the mass. This is the preferable form in which to administer the remedy, as the pills are small and can be readily taken. They need no *sugar coating* to render them palatable.

Cincho-Quinine Elixir.

℞. Cincho-Quinine (finely powdered) gr. xlviii.
Aqua rosæ (fresh)..... ℥ viii.
Syrupus simplex..... ℥ iv.
Tinct. cardamom..... ℥ ii.

Mix. Dose as a tonic, a dessert-spoonful three times in the 24 hours. The elixir should always be shaken before it is administered.

Cincho-Quinine Powders.

℞. Cincho-Quinine..... ℥i.
Sacch. alba (powdered)..... ℥iv.

Rub together in mortar and divide into powders of any size desired.

In intermittents, cincho-quinine may be given in 5, 10, 20, or even 30 grain doses, the same as sulphate of quinine. As an introduction to the treatment of fever and ague with cincho-quinine, an ipecac, or other emetic, is often of the greatest service. The remedy must act upon the walls of the stomach and the connecting organs, to produce constitutional effects.

The physician in charge of the United States Marine Hospital, Chelsea, Mass. (Dr. Graves), prescribes this preparation in the wards of that hospital, and speaks highly of it as an antiperiodic. *Boston Journal of Chemistry.*

Suicides in the Prussian Army.

However great may be the late triumphs achieved by the Prussian army, it seems, nevertheless, to be the most unpopular service in Europe. The domineering of the officers, the poverty of the soldiers, and the strictness of the discipline, render life to many intolerable. To prove this, it is necessary only to state that, according to the German statistics, there were in 1868 no less than 134 suicides in the army of North Germany. The total number of deaths amounted to 1,344. This frightful proportion is four times greater than that which exists in the armies of the Confederation. We find that in the army of Northern Germany, there is one suicide for every 2,238 soldiers; in Denmark, one for every 3,900; in Saxony, one for every 5,000; in Baden, one for every 9,000; in Wurtemberg the proportion is the same as in Norway—one for every 9,784; in France there is one suicide for every 10,000; in Sweden, one in every 15,000; in Bavaria it is the same as in Sweden; and in Belgium there is one in every 17,800. It may also be remarked, that between 1849 and 1852 the proportion of suicides in the Prussian army was only one to every 9,000 soldiers. *N. Y. Med. Rec.*

Extraordinary Recovery from Extensive Saw-Wound of the Skull.

Dr. A. C. Fulsom relates the following:—A man received a dangerous wound of the head from a circular saw, and was seen by him in about half an hour, when he found the condition of things to be as follows:—The wound commenced at the frontal bone, half an inch above the nose, and extended a little to the left and a little below the occipital protuberance, passing through the superior edge of the parietal bone. Measured by the convex surface of the skull

the length of the cut in the bones was nine inches. They fell apart over an inch—the length of the scalp wound being eleven inches. The membranes of the brain, as well as its substance, were divided, the former much lacerated, and the latter falling apart sufficiently to admit a common pocket rule to the depth of one and a half inches, and a small silver probe two inches, before touching the walls of the cut. Thirty-two minute pieces of bone, together with considerable sawdust, were taken from the wound, also a tablespoonful of the substance of the brain. No large arteries were severed, and the patient did not lose over two ounces of blood. The pulsation of the cerebral arteries could be distinctly felt, and there was no congestion of the brain or its membranes. The pulse 72. No pain or undue sensitiveness about the wound. The patient could not tell when the brain, membranes, or walls of the cut were touched, but the scalp was sensitive when handled. The cranial bones were brought in apposition by placing a tourniquet around the head, and gradually tightening it. The scalp wound was brought together by sutures, places being left for the exit of pus. The sutures were removed on the eighth day, and the wound healed by first intention, except at the places purposely left open. There was no cerebral disturbance, and no medicine required. He was dismissed at the end of three weeks, and in five or six weeks from the date of the injury he was again at work in the mill.—*Pacific Medical and Surgical Journal.*

Chlorate of Potash in Abortion.

Dr. J. S. Lewis (*Med. & Surg. Reporter*) details two cases, and alludes to others, from which he derived the most marked success from the use of chlorate of potash, in three-grain doses, four times a day, in preventing a tendency to abortion. In the one case the woman had aborted twice at seven and a half months, and in the other three times in two and a half months, and in both instances they were seriously threatened with a like misfortune, but were relieved by the above remedy.

Treatment of Sunstroke.

Sixteen cases of sunstroke were treated by Dr. Hutchison during 1868. The leading symptoms were extreme jactitation, restlessness, and convulsions. They were treated by hypodermic injections of 1-4 grain of morphia, followed by frictions of ice. All but four recovered. The effect of the morphia was prompt and salutary. In some cases brandy was administered.—*Pacific Med. & Surg. Journal.*

MEDICAL INTELLIGENCE.

(General Orders by the Governor in Council.)

Preparatory Leave.

The 3rd February 1870.

With reference to the Sections mentioned in the margin of the Leave Rules for Covenanted and Uncovenanted Civil Servants, Chaplains and Military Officers, the Governor-General in Council is pleased to lay down the following rule as applicable in both the Civil and the Military Departments.

Section XI. of the 16th June 1868 for Covenanted Civil Servants.
Section XI. of the Rules of the 31st July 1868 for Chaplains.
Section XVIII. of the Rules of the 10th November 1868 for Military Officers.
Section XVIII. of the Uncovenanted Service Leave Rules of 13th April 1864.

Local Governments have authority to grant subsidiary or preparatory leave for a period exceeding thirty days in case of necessity, but are invariably to report such relaxations of rule to the Government of India.

Saugor Circle—Medical Superintendence—Removal.

G. O. G. No. 71 of 1st March 1870.—The following extracts from General Orders by the Government of India are republished :—

Fort William, the 16th February 1870.

With reference to the G. G. O. noted in the margin, His Excellency the Governor-General in Council is pleased to direct the removal of the Head Quarters of Saugor Circle of Medical Superintendence from Saugor to Jubbulpore.

No. 603 of 1867.*
No. 1131 of 1869.†

* Madras G. O. G. 25th June 1867, No. 269.
† Madras G. O. G. 30th November 1869, No. 397.

European Hospitals—Lime Juice.

G. O. G. No. 74 of 8th March 1870.—In modification of para. 2 of G. O. G. 5th December 1865, No. 422, the Governor in Council is pleased to direct that Lime Juice, in lieu of Bottled Lemonade, be issued for the use of the sick in European Military Hospitals, in the proportion of two ounces of the juice to one pint of the beverage.

Military Officers in Civil Employ—Furlough Allowances.

G. O. G. No. 75 of 8th March 1870.—The following Notification by the Government of India in the Financial Department, is republished :—

No. 3292, dated 17th December 1869.—In continuation of the Notification of this Department, No. 2527, dated the 7th August 1869, and in amendment of Rule V of the Military Leave Rules of 1868, the Governor-General in Council is pleased to declare that the furlough allowance of any Military Officer in civil employ, who may after this date be granted furlough, shall not exceed Rs. 833-5-4 per mensem, or £1,000 per annum.

Covenanted and Uncovenanted Servants—Leave to Europe.

Leave and Allowances, 23rd February 1870.

The Governor-General in Council is pleased to direct that Covenanted and Uncovenanted Civil Servants proceeding on sick leave to Europe via Bombay from their Presidencies, are to take with them three copies of their medical certificates and the medical statements of their cases, one for their own use to be taken by them to Europe, one for the Standing Medical Committee before whom they appear, and the third for submission to Government.—(G. O. G. G. No. 1297 of 1870.)

Furlough Pay—Assistant Apothecaries.

G. O. G. No. 141 of 3rd May 1870.—The following extract from General Orders by the Government of India is republished :—

The following Military letter from the Right Honourable the Secretary of State for India, No. 69, dated 10th March 1870, is published for general information :—

MILITARY. INDIA OFFICE ;
No. 69. *London, the 10th March* 1870.

To His Excellency the Right Hon'ble the Governor General of India in Council.

MY LORD,—I have considered in Council your letter No. 2 of the 4th January last, bringing to notice that in the Regulations for the re-organization of the Subordinate Medical Department in India, the Europe rate of furlough pay for Assistant Apothecaries has not been laid down, and recommending that the same be fixed at £40 per annum for both classes of that grade.

2. I accede to your recommendation.—(G. O. G. G. No. 436 of 1870.)

I have, &c.,
(Signed) ARGYLL.

Furlough Allowances—Military Officers.

G. O. G. No. 153 of 17th May 1870.—The following extract from General Orders by the Government of India is republished :—

Simla, the 3rd May 1870.

The following Military letter from the Right Honorable the Secretary of State for India, is published for general information :—

MILITARY. INDIA OFFICE ;
No. 83. LONDON, 24TH MARCH 1870.

To His Excellency the Right Honorable the Governor-General of India in Council.

MY LORD,—Referring to paragraph 2 of your Financial letter, 4th January 1870, No. 8, I have to request that, in

order to place all branches of the service on an equal footing, you will issue a General Order notifying that, in future, the maximum furlough allowance of Military Officers, however employed, will be £1,000 per annum.

I have, &c.,
(Signed) ARGYLL.

Furlough—Private Affairs.

G. O. G. No. 162 of 24th May 1870.—The following extract from Notifications in the *Gazette of India* is republished :—

Financial Department, Leave and Allowances, Simla, the 10th May 1870.

The Governor-General in Council is pleased to notify that furlough on urgent private affairs, with pay equivalent to the British Regimental pay of rank under Section 11 of the Rules published in the General Order of the Government of India in the Military Department, No. 1064, dated the 10th November 1868, may be granted as often as it is applied for : provided that the authority granting it is satisfied of the urgency which leads to the application, and that the applicant is not at the time eligible for ordinary furlough. There is no other limit to the granting of this species of leave.

2. His Excellency in Council is also pleased to notify that the words "pay equivalent to the British Regimental pay of his rank" in the section above referred to, mean, in the case of a Staff Corps Officer, the "out of India" rate of pay as shown below :—

	£	s.	d.	
General Officer	1	5	0	per diem.
Brevet-Colonel and Lieut.-Col. ...	1	0	0	
Major	0	16	0	
Captain	0	10	6	
Lieutenant	0	6	6	

Allowances—Acting Appointments.

G. O. G. No. 171 of 31st May 1870.—The following extracts from Notifications in the *Gazette of India* are republished :—

The following extract and copy of Notification, dated 2nd September 1842, are published for general information.

Extract from a Despatch from the Right Honorable the Secretary of State for India, to the Government of India in the Financial Department,— dated London, 24th March 1870, *No.* 103.

Para. 2. I however consider it objectionable that any acting Officer should be allowed the full salary of an office for any period antecedent to the date of his permanent appointment thereto, and I have therefore to request that you will notify that exceptions to the rule on the subject, which were published in the *Calcutta Gazette* of the 3rd September 1842, will no longer be permitted except in the cases of Military Officers acting in staff appointments for officers on leave on medical certificate who, under the 13th clause of the Furlough Rules of 1854, are entitled to full salary after six months.

Notification—Fort William, 2nd September 1842.

No. 223 of 1842.—The following Rule, passed by the Honorable the President in Council in the Financial Department on the 17th ultimo, under the orders of the Honorable the Court of Directors, communicated in their despatch No. 5 of 1842 in that Department, under date the 9th February, is published in General Orders :—

Rule.—When an Officer has been temporarily holding a Civil or Military staff appointment in consequence of the absence of the fixed incumbent on sick leave within the limits prescribed in the Absentee Rules of the 29th January 1840, and the latter proceed to Europe, or otherwise vacate the appointment during absence, the *locum tenens* shall not be entitled to any higher allowance by reason of such vacancy, and in the event of his being permanently appointed to the office in which he has been officiating, he shall receive the full salary of that office only from the date of his permanent appointment.—(G. O. G. G. No. 489 of 1870.)

(General Orders by the Commander-in-Chief.)

Sanitary—Barrack Department.

No. 2.

Medical Officers having taken upon themselves in some instances to depart from the Orders of Government, as distinctly laid down in G. O. C. C. dated 17th May 1865,* and to order the destruction of cots, &c., are warned that they will be held pecuniarily responsible for any such unauthorized procedure.

* On the subject of disinfecting Barrack and Hospital furniture, which have been used by Cholera and Small-pox patients.

* * *

Officers' Passages to England—Troop Ships, &c.

G. O. C. C. No. 37 of 11th April 1870.—The Commander-in-Chief is pleased to notify that the Government of India has ruled that the provisions of the last clause of Government General Order No. 1109* dated 10th November 1869, in respect to the rate of Passage Money, are not applicable to the Officers of her Majesty's British Service, who come under the operation of the Royal Passage Warrant.

* Madras G. O. G. 23rd November 1869, page 280.

TO CORRESPONDENTS.

DR. SHORTT.—*In our next.*

BOOKS, &c. RECEIVED.

Dr. Stewart's Chloride of Ammonium in Hepatitis and Abscess of the Liver.
Indian Medical Gazette, *August.*
Journal des Connaissances Médicales, *to 30th July.*
The Printer's Register, *No.* 85.
Mr. Ross' Report of the Native Army in Bengal for 1869.

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ORIGINAL ESSAYS.

ART. XX.—*Antidote to the Cobra Poison.* By JOHN SHORTT, M.D., Surgeon, Superintendent General of Vaccination, Madras Presidency.

ANTIDOTES to Cobra-poison have been numerous indeed, for most people seem to possess some remedy said to be a reputed antidote. I have myself examined over five hundred such supposed antidotes, and found them to be worthless rubbish, unworthy of the name ; and by my experiments I have proved the fallacy entertained by the public with reference to such remedies, and have either dispelled the credulous belief, or shaken the public faith in charms, incantations, and a variety of nostrums reputed as specifics against cobra-poison.

A somewhat novel antidote is now hailed by a Mr. S. B. Higgins, of the State of Magdalena, who, in a letter to a late number of the *European Mail*, states, from trials made by himself, "all animal poisons have their specific antidotes in the gall of the animal or reptile in which these poisons exist ;" consequently, the bite of the cobra, or of any other poisonous snake or reptile,can be cured by the administration of a spirituous solution of the gall of the cobra, which Mr. Higgins recommends should be prepared as fol-

lows: Pure Spirits of wine, or 95 per cent. alcohol, or the best high wines that can be procured, 200 drops; of the pure gall, 20 drops; in a clean two ounce phial, corked with a new cork; give the phial 150 or 200 shakes, so that the gall may be thoroughly mixed with the spirits, and the preparation is ready for use. In case of a bite, put five drops (no more) of the preparation into half a tumblerful of pure water; pour the water from one tumbler into another backwards and forwards several times, that the preparation may be thoroughly mixed with the water, and administer a large tablespoonful of the mixture every three or five minutes, until the whole has been given. In case the violence of the pain, and hæmorrhage or swelling of the bitten part should be but slightly alleviated after the whole has been taken, repeat the dose, prepared with the same quantity of the preparation in the same way, and and administer as before. In curing upwards of fifty cases of snake-bite, I have never been obliged to repeat the dose, except in two instances, and have never lost a case." Such are the instructions given by Mr. Higgins. My friend Mr. G. H. Cammiade kindly sent me the page of the *European Mail* containing Mr. Higgins' letter, and I had not the leisure to undertake the experiment in testing this novel remedy at the time, as I was about leaving Madras for the Northern Districts.

On my arrival at Chicacole, Mr. J. Hope, the Principal Assistant Collector, informed me of the capture of a cobra in his compound a couple of days previously, and that another cobra was captured some time previously to the last; and as Mr. Hope said these snakes were with the snake-man in the village, I arranged to conduct a series of experiments the next morning.

On the 9th August, at 7 A. M., the snake-man produced four large cobras. I examined these, and found that all had their fangs intact, but three out of the four were in a starved and miserable condition. These cobras I numbered from one to four successively. No. 4 was the one last captured in Mr. Hope's compound (on the 7th instant); it was rather a small-sized snake, and measured 3 feet 10 inches in length. From this snake I extracted about a fluid dram of poison on a spoon, and then had the head cut off, the abdomen laid open, and the gall-bladder extracted: the latter contained only five minims of a dark, greenish-coloured, somewhat viscid bile; to this I added fifty minims of alcohol,

and attended carefully to the shaking, &c. The gall mixed readily with the alcohol; some small floating shreds were visible for a time, most probably epithelial cells.

Experiment No. 1.—Of the poison extracted from snake No. 4 before it was destroyed, half a drop was taken up on the point of a penknife, and inserted below the wings and under the skin of a chicken at 7-33½ A.M.: at 8-16½ A.M. the solution of gall was administered to this chicken; the same was repeated at 8-40, and at 9-1 A.M. the chicken died, notwithstanding, with the usual symptoms of snake-poison. The object in inoculating this chicken was to test the snake-poison, and as the symptoms of poisoning began to manifest themselves, the solution of gall was now administered as a test.

Experiment No. 2.—A full grown brown bitch was bitten by cobra No. 1 at the back of the right hind leg at 8-22 A.M., and at 8-26 the gall mixture was given. At 8-40 the dog was very restless and uneasy; the mixture was now repeated, the animal continued dull, became drowsy, and gradually died at 10 A.M. The cobra that bit this dog was miserably thin, apparently from starvation; it had to be applied several times ere evidence of a wound having been inflicted became visible. The dead-weight of this dog was 30 pounds.

Experiment No. 3.—A full grown brown and white bitch was injected with 40 minims of the cobra-poison that was extracted from cobra No. 4, over the left shoulder at 8-33 A.M.; at 8-42 it seemed somewhat restless; at 8-47 the gall mixture was administered by the mouth, and injected over the right shoulder with the hypodermic syringe; at 8-50 it was very uneasy. Medicine repeated. 9-20 lying down and moaning. 9-35 apparently dying, struggling, voiding excrement. 9-40 insensible, breathing scarcely perceptible. 9-45 dead. Dead-weight 36 pounds.

These experiments were very fairly and carefully conducted, and the result terminated in complete disappointment, for there was not the slightest amelioration in the symptoms that usually result from snake-poison.

It is an old and well reputed fable among *old women* in Europe, that the fat of the viper is the best antidote to its poison; and when I first started these cobra experiments, several correspondents called my attention to this report. But Mr. Higgins' account of the gall outbeats the viper fat.

From the detailed accounts given by that gentleman, I believe that he may have successfully treated over fifty cases of snake-bite; but that these were occasioned by poisonous snakes I cannot believe. Perhaps it may not be known that the natives in this country attribute other virtues to the gall of animals. It is reported by them that if the gall of an animal be poured into the nostrils of a dog, its scent after that particular animal becomes very keen, and that it will readily track the animal whose gall had been thus used. I was greatly amused some years ago to see a village huntsman put one of his dogs through this process—who, having shot a hare while out with me a-shooting, as we approached a large tank, opened the hare, extracted the gall, and emptied its contents into both nostrils, and pitched the animal immediately after head foremost into the tank, from whence it had to swim ashore. He said after that the dog would smell a hare within half a mile. Unfortunately, not long after, in passing the village *chuttram*, a cooly was sleeping inside with a small bundle at his head. The dog crept in and bolted with his *cuttichooroo* or cold rice, that was tied in a piece of cloth. Some people sitting by happened to see the dog with his bundle, and there was a grand hooting after the animal, much to the discomfiture of my friend the shikaree, at the keenness exhibited by the dog for the cold rice, after the special treatment it underwent for catching a hare!

I may as well state here, that I tested at the same time some pill masses sent me from Rangoon for the purpose by Mr. Apothecary Kinsley, as a reputed antidote for snake-bite among the *Poonjee Priests* in Burmah, from whom Mr. Kinsley obtained the stuff he sent to me for trial; and although the experiment was carefully conducted, it resulted in complete failure, as the dog experimented on died in two hours and 19 minutes with all the symptoms of cobra-poisoning. In this animal also there was some difficulty in getting one of these half starved snakes to bite. Several other experiments were conducted at the same time; these I must reserve for a future occasion.

The whole of the experiments above detailed were conducted in the presence of Mr. J. Hope, C. S., Major Salter and Captain Morris, besides several natives, at Chicacole, on the 9th August 1870.

ART. XXI.—*Cholera at Ramnad.* By Native Surgeon M. ANTHONY.*

(Communicated by the Inspector General Indian Medical Department.)

IT is more than three weeks since my daily report of cholera was discontinued, and as there has been no admission since, I am satisfied the epidemic has completely disappeared from the station, and beg to submit the following brief report upon it.

As I had already informed you, in my letter No. 8, dated 13th March 1870, the epidemic was imported into Ramnad by a woman, a native of Conjeveram, who was returning from her pilgrimage to Ramesuram, with her husband and child. Her husband, whom I met on the 12th March last, when I first received intimation of the outbreak of cholera, stated that his late wife was attacked with cholera at Ramnad on the 8th and died on the 11th of that month. From further enquiries from the same individual, I elicited the fact of their having stayed at a chuttrum at Danooseody, seven miles distant from Ramesuram, where there was a cholera patient at the time. They were four days in coming from that chuttrum (where the woman must have evidently caught the infection,) to Ramnad, where the poison fully developed itself, showing thereby that the period of incubation was four days in this case.

Simultaneously with this there was another pilgrim, who was also said to have been on his return from Ramesuram, and who succumbed to the influence of the disease in another part of town, about three-quarters of a mile from the other locality, and which was near a tank, the water of which is neither used for drinking nor for any other purpose, and where there is no drain or sewer, which may perhaps account for the non-dissemination of the disease in that neighbourhood.

The chuttrum in which the first fatal case occurred is situated in the centre of the town, and within forty yards from a tank which supplies the inhabitants with drinking water, and where they bathe and wash their clothes, &c. There are also open drains around the chuttrum, and it is

* Letter to Deputy Inspector-General I. M. D. Southern District, dated 3rd May 1870.

surrounded on three sides by broad streets, where people are constantly seen passing and repassing.

About thirty yards towards the east of the chuttrum, and in a straight line with it, there was a Gosha woman, widow of a respectable man lately in the service of the Zemindar of this place, who was attacked on the night of the 11th, a few hours after the death of the first case. She having lost her husband a year previously, was still in a state of extreme sorrow and depression of mind, which might not only have predisposed her to the attack, but also afforded the disease an opportunity of exercising a fatal influence over her. She died a few hours after its attack.

It was only after the occurrence of this third death that news of the outbreak of cholera reached me, when, having made enquiries of its whereabouts, I at once repaired to the spot, and having satisfied myself of the correctness of the report, called upon the Police Inspector, as the Head Assistant Magistrate and Sub-Magistrate were absent on duty, and requested him to adopt such measures as he considered necessary to prohibit the influx of pilgrims into the town, which he readily did. That very night news of the setting in of this fearful disease spread through the length and breadth of the town, and caused a general panic.

Through the assistance of the Zemindar's agents, I was able to proclaim to the people by beat of tom-tom, that medicines were available at the hospital at all hours of the day and night, and for the convenience of those who lived at a distance from the hospital, I left a small supply of cholera pills with some respectable men in different parts of the town, for distribution, with directions about their use. The Zemindar was very kind to place under my orders two native physicians, who received instructions from me about the treatment of cholera cases, with cholera pills and stimulants, and who executed my commissions satisfactorily. The Head Magistrate also contributed his quota of assistance by placing at my disposal two of his peons, whom I employed in going round the town to ascertain the number of cases attacked, and to bring me information about the progress of each individual case.

The choleraic poison having once planted its foot in the centre of the town, appeared to have transported itself to, and propagated itself in that part of the town, and in that part only, which is about 200 yards from the chuttrum,

and where the houses are small, low-built, ill-ventilated, overcrowded, and where very little regard is paid to conservancy, and all rules relative to sanitary condition are set at defiance. The people living in those places are generally ill-fed, and belong to that class of the native community which pays very little attention to personal cleanliness. In the majority of houses visited by the epidemic, the breathing space allowed to each individual could not have been more than 50 cubic feet. There were no windows in the rooms, and to make the matter worse, the cooking operation also was carried on in the same room, the amount of carbonic acid thus generated tending to diminish still further the amount of oxygen consumed by each individual. Although there are no records to prove it, still from information received from old residents and from some very intelligent servants of the Zemindar, I learn that this part of the town had always suffered first and most severely from cholera epidemics.

I made strict enquiries to discover if the poison could have been conveyed by personal intercourse from the patient in the chuttrum, to the place where it raged afterwards, as some of the people (cowherds and agumbadiars) are frequently employed in sweeping chuttrums, &c.; none of the people who were attacked were employed in the chuttrum, so that the only way in which the poison could have scattered and disseminated itself, is by drinking water, as mentioned below, which is worthy of remark.

As usual in all native towns, the banks of tanks are divided into several partitions, having flights of stone steps, which are used exclusively by certain classes of natives, who seldom trespass upon those set apart for others; for instance, the Sudras never, except in a clandestine manner, approach the steps used by Brahmins and vegetarians. That part of the tank which is nearer the chuttrum, and where the clothes of the first patient must have been washed, is the part from which nearly fifteen-sixteenths of the cholera patients have taken their drinking water, and is the part of the tank set apart for their use. The theory, then, that drinking water is one of the means by which cholera poison is propagated, holds good here also.

In addition to the ordinary symptoms of cholera, in the earlier admissions I observed that several round worms were vomited and passed in the dejections, which afforded

me a clue as to the plan of treatment to be adopted, and just then having read of the Carbolic Acid treatment recommended by Dr. Brockman, I proceeded at once to give it a trial, which, though not carried out as fully as I could have wished, from want of a cholera ward in the hospital and of proper assistance, was nevertheless not inferior in its results to other remedies hitherto tried, as will be observed from a comparative statement which will be given below.

One of the patients, a female, who had taken three doses of Carbolic Acid mixture, had a sanguineous discharge from the vagina, which was brought to my notice by her mother, and which I considered at the time was the result of gin contained in the mixture, as it belongs to the same family with sabine, which is an emmenagogue, and discontinued the medicine at once, substituting cholera pills without opium. Subsequently, on a reference to Dr. Tanner's Practice of Medicine, Vol. II., page 61, I find that during the stage of collapse, women frequently have a sanguineous discharge from the uterus, sometimes amounting to hæmorrhage.

There was another case of a woman who was suckling her child while she was attacked with this terrible malady. It was of a violent form ; and even in the stage of collapse, while the other secretions were completely suspended, that of milk appeared to continue, though in a diminished degree, and the child was regularly put to breast. It never caught the infection and the mother also recovered.

There were two cases of *relapse*, if I may so call it, within a short interval of five days, although I do not doubt the theory that one attack does not exempt from subsequent attacks, still I do not consider that these two cases afford any corroborative evidence of the truth of that theory, for the interval between the two admissions was very short. Both of them must have been suffering from choleraic diarrhœa on their first admission, which was on the 17th March, and as soon as it was stopped they were discharged on the evening of the 18th. But on the 21st they were again attacked, which must have been the real cholera, the poison having taken four days to develope itself completely.

During the prevalence of the epidemic there was a shower of rain, which, I thought at the time, would tend to dim inish its violence, but on the contrary it tended to aggravate it, as the number of admissions on the following

day was greater than before. It is perhaps due to the mildness of the shower.

In addition to the medical treatment which I shall presently describe (though there is nothing new in it), the streets were completely cleaned, all the rubbish, weeds and shrubs that were found in the streets and gardens were collected and set fire to, all the dejections were strictly ordered to be buried deep, the clothes well boiled and the water thrown into pits dug for the purpose and covered with dry earth, so that no room was allowed for these things to find their way into the tank, to perpetuate the dissemination of the poison. The only disinfectants that I had with me at the time, were quick lime, charcoal, and sulphur, the former of which was dissolved in water and sprinkled on the floor, and charcoal kept in different parts of the infected houses. Powdered sulphur was thrown on red hot coal in shallow pans to generate sulphurous acid gas. All the houses where deaths occurred were whitewashed.

There were three modes of treatment adopted, which were by Carbolic acid, Patterson's pills with and without opium and Acetic acid. The last was tried only in three cases, so that it will not be fair to institute a comparison between it and the other remedies.

Carbolic acid was administered after every motion and not after every half-hour as was recommended by Dr. Brockman, in consequence of the difficulty experienced by the relatives of the patients to measure the time correctly. Even to get them to administer the medicine after every motion was not an easy task. Besides in the quantity also they made mistakes, sometimes giving over-doses and at other times smaller ones. In place of the enema recommended by him, when the bowels were bound, I was obliged to give small doses of Calomel and Soda, which answered well in some cases. As for the dry cupping, I substituted a blister to the loins which, in successful cases, not only stimulated the kidneys to action, but also the liver, as was seen by the color of the motion. The reason why I was obliged to deviate from the course recommended by the Doctor, was, as I mentioned before, the want of a separate ward in the hospital and of proper assistance.

Stimulants were administered in small doses, sometimes alone and at other times in combination with chicken broth. For thirst, very sour conjee water, which may be

said to be equal in acidity to vinegar, was given in small doses. For warmth, hot sand was applied, being much more handy than hot water bottles. The importance of careful nursing in this disease cannot be overrated. Where there was sufficient attention and care bestowed by the attendants, the recovery was always great. Had it not been for the difficulties I mentioned above in carrying out this treatment fully, the percentage of recovery would have been much greater. On a reference to the tabular statement given below, it will be observed that there was no death under treatment with cholera pills, which is owing to their having been administered immediately on a patient passing a loose motion; and the chance of mistaking, and the quantity also were not great. Besides, the epidemic was on the decline when the pills were being administered.

	Native Treatment.	Carbolic Acid.	Patterson's Pills with Opium.	Patterson's Pills without Opium.	Acetic Acid.	TOTAL.
Admissions.	15	44	12	7	3	81
Discharges...	8	32	12	7	3	62
Deaths.	7	12	0	0	0	19

During the first part of the epidemic, my assistant and myself were able to take our rounds into the town and see almost all the cases and prescribe for them; but in the latter part, having met with a serious fall from a pony, when I took the Head Magistrate and Sub-Magistrate to show them the nature of the improvements required for the cleanliness of the infected locality, I was laid up for a few days and was unable to repeat my rounds, and my assistant also was fully occupied in the hospital; so that towards the decline of the epidemic there was not much supervision exercised; which may partly account for the unusually large success attributed to Patterson's pills, which were then administered.

In conclusion I beg to draw your attention to the following facts.

1*st.* That the chuttrum mentioned in para. 4 has always been the focus of the cholera epidemic at Ramnad, pilgrims to and from Ramesuram always halt here, and as this is situated in the very heart of the town, epidemics brought in by the pilgrims from one or other of the many places visited by them, in the course of their pilgrimage, are disseminated in the town, and the inhabitants are made to suffer. I would therefore humbly suggest the removal of the chuttrum from its present locality to a spot outside the town, so that the town may not be in danger of suffering from any infectious disease from travellers.

2*nd.* A great deal in a sanitary point of view has to be attended to in this place. The Head Assistant Magistrate has done something, by raising subscriptions, to keep the town clean for the present, but nothing of a permanent nature has been set on foot for the purpose. It is high time that Ramnad should enjoy the same benefit of the Municipal Act which is enjoyed by towns of less magnitude and importance. Streets require to be widened and properly looked after: overcrowding prevented as much as possible. Because, however unwilling people may generally be to live apart from each other in healthy seasons, yet in times of sickness they instinctively take the precaution of deserting their homes and betaking themselves to villages, where they live till the crisis is past, as was the case here during the late epidemic. Instead of waiting till another epidemic breaks out and the people scatter themselves of their own free will, we should, I think, on the principle of "prevention better than cure," spare no pains to do what is necessary, and the people will soon understand our object and fall in with our views.

I beg to be permitted to bring to your notice the highly satisfactory manner in which 3rd Class Hospital Assistant T. Streenevasooloo, No. 798, assisted me during the late epidemic. He was not only able to go into the town and see some of the cases, but also he spent a great part of his time in the hospital, and was ever ready to attend to the wants of applicants for relief.

ART. XXII.—*Case of Congenital Syphilis in which Tracheotomy was performed twice. Death from Embolus.* Under the care of Surgeon R. W. COCKERILL, Officiating Surgeon, General Hospital, Madras.

THE subject of this case, a native lad ten years of age, was admitted into the General Hospital in April 1869, under Dr. Paul, with extensive ulceration of the pharynx, involving both tonsils and the arch of the fauces; the uvula having been already destroyed. He was unable to open his mouth fully from swelling of the glands of the neck, and complained of pain and difficulty in swallowing. Also stated he had been ill about two months. His head was laterally flattened, forehead prominent and low, front teeth pegged and notched, eyes healthy.

He was put upon full diet and the Iodide of Iron, and notwithstanding several attacks of fever, soon improved; the ulceration of the throat healed up, and the swelling of the glands subsided. Was discharged on the 14th of May. Was re-admitted on 17th September—under my care—in the following state: Face pale and anæmic, conjunctivæ bloodless, body thin and emaciated, general appearance cachectic. Has several large ulcers under the jaw and on the front of the throat, where there are numerous indurated tumours surrounding the trachea. The ulcers are covered with a yellow slough, and look very unhealthy and discharge fetid pus.

Treatment.—To take ten drops of the Syrup of Iodide of Iron three times a day, poultice to be applied to the ulcers.

September 28th.—Complains a good deal of cough, especially at night. No ulceration to be seen in the throat; chest healthy.

October 2nd.—At the visit this day the patient was found to be suffering from alarming dyspnœa. Examination of the chest proved that the lungs were much congested, and very little air was passing through the trachea. As the symptoms were urgent, and no delay possible, tracheotomy was performed. The operation was difficult, as a large mass of indurated tissue had to be cut through before the trachea could be reached. After an ordinary double tube had been inserted the breathing was greatly relieved.

10*th.*—Wound looking clean and healthy. Has no difficulty in breathing through the tube; sleeps well and eats well. Is improving in general health. A little mercurial ointment is being rubbed into the thighs.

November 6*th.*—Going on well and gaining strength. The ulceration about the front of the throat is healing. The tube was taken out yesterday, but had to be replaced after two or three hours, as the patient could not swallow without it.

18*th.*—The tube was again taken out to-day, but it had to be replaced.

December 4*th.*—All the ulceration on the front of the throat has healed.

24*th.*—The tube was removed to-day, all the swelling and induration about the trachea has subsided. Simple dressing to wound. Omit all other treatment.

January 1*st,* 1870.—Well; discharged.

March 21*st.*—Re-admitted to-day with great difficulty of breathing, and looking weak and half-starved. There is a large hard tumour under the left ramus of the lower jaw. The lower halves of both lungs are dull on percussion, and large crepitation audible over them. Increased vesicular murmur over both apices. Heart's action tumultuous.

22*nd.*—Respiration much embarrassed, cough very troublesome; he expectorates a large quantity of viscid mucus. Takes a mixture of Wine of Antimony, Wine of Ipecacuanha, and Tincture of Squills, and has a mercurial vapour bath every third day, also steam inhalation frequently.

26*th.*—Is improving in appearance: the congestion of the lungs is less, cough not so troublesome, appetite good, tongue clean, takes full diet with chicken broth and wine, continues the expectorant mixture and fumigation.

April 1*st.*—Improving steadily, cough much better.

6*th.*—Has no cough whatever, lungs natural, no difficulty of breathing, appetite good. The tumour below the lower jaw remains. Omit expectorant mixture and steam inhalation.

15*th.*—Tumour decreasing, much improved in general health.

23*rd.*—Well; discharged.

July 9th.—Re-admitted to-day in the following condition. There are two circular ulcers under the lower jaw on the left side, which have irregular raised edges and discharge thin watery pus. Has considerable difficulty of breathing and frequent cough, attended with muco-purulent expectoration; complains of pain in the throat and weakness. Lungs natural, but the vesicular murmur is weak; a loud tracheal rattle is audible during inspiration and expiration, and his voice is more shrill and nasal than formerly. There is no ulceration to be seen in the throat, but the uvula and tonsils are gone. The posterior nares seem obliterated, and he breathes through a small central cleft in the palate. He states that the ulcers originated through poulticing a hard swelling, and that they have now been open more than two months.

July 22nd.—Is in much the same state. The ulcers have been poulticed and he is being fed up.

August 9th.—Complains of difficulty of breathing, which is only relieved when he expectorates thick viscid purulent fluid. The ulcers are now being dressed with mercurial ointment, and he has the vapour bath and fumigation to the throat. Takes also an expectorant mixture every six hours.

19th.—The breathing is now more difficult, and he is constantly trying to clear his trachea of matter. The ulcers are unhealthy-looking, and he sleeps badly. Has fomentations to the throat and inhalations of steam frequently.

21st.—Last night had no sleep, and was constantly sitting up coughing. Percussion of chest somewhat dull, mucous rattle audible all over both lungs, pulse 130, respiration 40 and laboured, face expressive of great suffering, head thrown back, and every muscle of the chest working violently.

As it was evident he could not last long, I determined again to perform tracheotomy; he struggled greatly and resisted the operation, therefore chloroform was administered, but very cautiously. He soon became insensible, but hardly had I divided the skin before the breathing ceased. I opened the trachea and inserted a tube as rapidly as possible, while cold water was dashed into his face, a galvanic current passed through the heart, and artificial respiration kept up. After an interval of about thirty seconds, respiration commenced through the tube, and in half an hour he was breathing quietly and steadily. He soon fell asleep, and slept the greater part of the day and following night, only waking up occasionally to take nourishment, which he

swallowed easily, after withdrawing the tube a little, because it pressed somewhat upon the œsophagus. At ten o'clock on the morning of the 22nd, he was seated upon his bed cleaning the tube with a feather. About eleven he began to get dyspnœa and pain in the chest and became very restless. The dyspnœa increased although the tube was free and no obstruction in the trachea could be detected; shortly afterwards he died.

The *post-mortem examination* was conducted by Mr. Brockman, to whom I am indebted for the following report.

EXTERNAL APPEARANCE OF BODY.—Body fairly nourished. Rigor mortis present. A large ulcer on the left side of the face below the lower border of the jaw. In the median line above the sternal notch is an incision about 1½ inches long communicating with the trachea.

HEAD.—The cranial cavity was not examined. On removing the lower jaw, no posterior nares were to be seen, but a foramen which was mesially situated, and which was capable of permitting the passage of a quill from the mouth into the roof of the pharyngeal cavity. The uvula, tonsils and communication between the posterior nares and mouth were deficient.

THORAX.—The larynx, trachea, lungs and heart were removed *en masse* in order to demonstrate more fully the state of the parts. On dividing the larynx and trachea longitudinally along the posterior mesial line; the mucous membrane shewed an extensive ulceration from below the vocal cords down to the bifurcation of the trachea into the bronchi: in some parts the ulceration was deep, and through the ulcerated portion was seen the internal opening of the wound described externally as above the sternal notch; no cicatrices existed. The ulceration was very irregular in its outline. The bronchial mucous membrane was highly congested but not ulcerated, and contained a muco-purulent fluid.

Right Pleura.—No adhesions. The lung was extremely anæmic anteriorly; posteriorly there was some hypostatic congestion; no tubercle.

Left Pleura.—No adhesions; lung very anæmic; posteriorly more congestion than on the right side; no tubercle.

Heart.—Left ventricle very closely contracted; empty. Right ventricle fully dilated; fluid blood flowed out of it when the apex was removed. A semi-decolorised clot

extended from the ventricle into the pulmonary artery, and branched into the vessels leading to both lungs, and dividing into the fine vessels of these arteries.

ABDOMEN.—Viscera in their normal positions.

Liver.—Its upper convex surface presented a number of small cicatricial opacities, dipping to a greater or less extent into the hepatic tissue, and shewing a similarity to the cicatrices of "gummatous" tumours. The entire organ was congested. Gall bladder contained some bile. Weight 1lb 7 ozs.

Spleen.—Normal; weight 3 ozs.

Kidneys.—Normal, but slightly congested, weight (of both) 3 ozs. 6 drams.

Sectio cadaveris six hours after death.

A painting has been made of the inner mucous surface of the larynx and trachea. The original and the drawing are in the Madras Medical College Museum.

This boy was a capital instance of congenital syphilis, and the progress of the case shewed what a marked effect want of proper nourishment has in developing the taint. He was always admitted in a most cachectic condition, and he generally improved rapidly after getting good food; as it is rare for syphilitic ulceration to attack the trachea, it is possible the irritation created by the tube after the first operation had something to do with its development. Although the second operation did not long prolong his life, it gave him his only chance.

The cause of death was undoubtedly the clot in the pulmonary artery, regarding which Professor Niemayer says: "It is easy to understand why metastatic infractions of the lungs are caused by emboli from disintegrating thrombosis of peripheral veins or from suppurating or sanious surfaces. When an embolus is detached from its point of origin by the current of the blood, it meets with no obstacle on its way to the heart, as the veins through which it travels are constantly growing larger. It passes unhindered into the right heart and into the pulmonary artery, and is not arrested nor impacted until it arrives at some branch of the latter, whose diameter is less than its own."*

* Niemayer's Practical Medicine, translated by Humpreys and Hackley, Vol. I, page 154.

Art. XXIII.—*Cases of Prolapsus Ani.* By Mr. B. L. Xavier, Assistant Apothecary.

Case 1.—About six months ago Mr. W., Æt. 38, consulted me regarding his general health, stating that he was suffering from pain and uneasiness in the anus, sometimes in the erect posture, but generally after defecation, that his complaint was of some years' duration, that he was obliged to take a change lately on furlough to Europe without any permanent benefit, and that medical treatment only tended to aggravate his suffering.

On examination the integument round the anus was considerably relaxed and thickened, and a protrusion of about ¾ of an inch was observed. It had a firm consistence, rough, irregular surface, of a congested appearance, with a dense coating of mucus, and presented the appearance more of a fungous excrescence than a simple descent of the bowel.

Solid caustic was gently and freely applied every morning for the first week; this seemed to produce no discomfort to the patient, or have any ill-effects on the parts.

At the termination of the second week, the patient declined to have the caustic application repeated, as it caused considerable irritation; pain, and frequent calls to stool being the result, and the descent of the bowel being about the same.

Caustic was discontinued; glycerine and cold hip baths and good diet were recommended. After a lapse of three weeks, the protrusion wonderfully disappeared.

Case No. 2.—A little boy, Æt. 3 years, was a poor victim to prolapsus ani for one year, which resulted after an acute attack of diarrhœa, consequent on teething. Although the diarrhœa was checked by the usual astringents, still the descent of the bowel from 1½ to 2 inches continued obstinate and unyielding. After each stool, with great difficulty and pain to the child, the mother had to push up the rectum. Bowels opened once or twice in 24 hours, motions bilious and consistent.

The treatment in this case consisted of Tinct. of Iron internally, and injections of Sulphate of Zinc and Iron,

without any apparent benefit. All remedies were omitted, nourishing diet and cold hip baths ordered. The little boy rapidly improved in health, and the prolapsus disappeared.

ART. XXIV.—*Notes Therapeutical and Pharmaceutical.*

By G. BIDIE, M. B. and F. R. G. S.

No. II.

Compound Dislocation of the Elbow.

THE following case, which occurred in my practice some years ago, is published, partly to show how readily nature will sometimes respond to conservative surgery in India, and partly to serve as a caution against ascribing success in such instances to any particular remedy or mode of treatment. The means employed on this occasion were so simple, that no special efficacy can be ascribed to them, and yet it is more than probable, that if carbolic acid had been used with the same results, I should have recorded the case as an example of the value of that remedy in compound dislocation. I do not by this mean to depreciate the immense value of carbolic acid in surgery, but simply to show the unreliable nature of the *post hoc ergo propter hoc* mode of deduction in medical inquiry. I cannot also refrain from remarking, that it is unfortunate, that some of the advocates of the use of carbolic acid in surgical practice should seek to explain its mode of action by a theory as to the cause of disease, which, if carried to its extreme, would stand in the way of sanitary improvements in hospitals, &c. The *germ-theory* of the origin of disease, as it now exists, is simply a modification of the old panspermic doctrine of Spalanzani, which was based on evidence drawn from the very phenomena that it pretended to elucidate. The reasoning in both instances runs somewhat as follows: Here are certain phenomena which can be better explained by the supposition of specific atmospheric germs being the exciting cause than in any other way, therefore such germs do exist and are the proximate cause. I do not presume to say that such germs are non-existent, but until some substantial proof can be given of their entity, we should, as votaries of science, doubt and wait.

*A boy, about 12 years of age, was admitted on the evening of the 23rd May with an injury of the left arm, caused by a fall from a mango tree on the previous day. The limb was tightly bound up with splints and bandages, and on undoing these it was found that he had sustained compound dislocation of the elbow joint. The lower end of the humerus was projecting to the extent of two inches or more on the front of the forearm, and the inner condyle was torn off but remained in the wound. There was a considerable amount of swelling, and the edges of the opening tightly embraced the shaft of the bone. The wound was slightly enlarged to relieve the constriction, but it was found impossible to replace and keep the end of the humerus in its natural position. The greater portion of the articular surface was therefore removed by the saw, and sharp edges were trimmed with a bone-cutting forceps. The dislocation was then reduced, the opening in the tissues closed by sutures and covered with lint soaked with collodion, and the arm placed in a splint. The wound did not unite by first intention, but began to suppurate, and the discharge at once displaced the piece of lint applied at the first dressing.

May 25th.—Good deal of constitutional disturbance; wound looking very unhealthy. Apply poultice; to have diaphoretic mixture during the day, and opiate at night to ensure rest.

June 5th.—No fever, doing well; taking liberal diet and stimulants; wound nearly closed at upper part, at lower end still open and considerable discharge of synovial fluid, granulations healthy. Apply simple dressing.

14th.—Wound completely closed with healthy granulations, and skin closing in fast, considerable degree of thickening in soft tissues about the joint. Continue treatment.

July 28th.—There has been steady progress towards a cure from the date of last report, and the lad will be discharged this day. He can slightly pronate and supinate, and also bend and extend the forearm, and I feel sure that in course of time the joint will permit of freer motion. Strange to say, while the above case was under treatment, a beggar presented himself, who had sustained a similar injury, from a precisely similar accident. The result how-

* The following statement has been abridged from a private note-book.

ever had been very different, for the native treatment by tight splints and bandages had induced gangrene, which removed the forearm in the course of a week or so.

Amorphous Cinchona Alkaloids prepared from Indian-grown Barks.

IN No. 1 of the present series of this Journal, Mr. Cornish gave an interesting description of the preparation containing the cinchona alkaloids in an amorphous form, as it is now made by Mr. Broughton, and an account of its therapeutical effects in the treatment of 270 cases of malarious fever. Since that paper appeared the substance has been subjected to further trials, and the results would seem to indicate, that it presents in a cheaper, though slightly more bulky form, a remedy equal to the ordinary Sulphate of Quinia as an antiperiodic. The powers of Mr. Broughton's preparation as a tonic have not yet been tested, but it seems probable, that, as it contains constituents of the bark not found in the purified alkaloids, it will, like an infusion of the former, prove more efficacious in some cases of debility than solutions of the latter. The returns in the annexed table are from two stations, and the results, both as regards the average period under treatment, and the quantity of the drug used in each case, are highly satisfactory. The Hospital Assistant in charge of the Hospital at Lackady believes, that the new preparation may, with reference to its effects in cases of fever, be placed on a level with quinine; and Dr. Scudder makes the following interesting remarks:—

"In all cases in which I have used it, I have found it a specific for the different forms of malarious fevers, quite as much so as the Quiniæ Sulphas. The quantity of the amorphous quinine requires to be somewhat larger than that of the sulphate, in order to produce the same result. It requires about the same amount of acid to dissolve it, but does not dissolve so speedily as the sulphate."

* * * * *

"In my hands, so far the amorphous quinine has been successful, every case has yielded to which I was able to pay proper attention, that is, every case in which the patient has strictly followed instructions, and every case that has occurred in hospital. I am therefore strongly in favour of using it in the place of the sulphate as far as possible."

TABLE *showing the results of treatment of cases of malarious Fever, by the amorphous Alkaloids prepared from Indian-grown barks.*

Station and name of Medical Officer.	Total Cases treated.	Type of Fever.				Average time under treatment.	Average quantity of drug used.	Results.		Remarks.
		Quotidian.	Tertian.	Quartan.	Remittent.			Cured.	Doubtful.	
						Days.	Grains			
LACKADY. Hospital Assistant T. Israel.	166	135	18	13	...	3·7	53	166	...	...
RANEEPETT. Dr. Scudder.	55	51	...	..	4	8·7	52	55	...	...
Total.....	221	186	18	13	4	6·2	52	221	...	...

The Cinchona Borer.

ABOUT a year ago, some alarm was excited by the report that an insect, similar to the notorious coffee borer, was attacking the trees in the Goverment Cinchona Plantations on the Neilgherries. Some time after this, Mr. Broughton was kind enough to send me a specimen of the insect, and a stem of a young tree that had been attacked and killed by the borer; and I may state at once, that it is quite different from the pest that attacks the coffee, the former being the larva of a beetle, and the latter the grub of a moth. The stem of the cinchona sent was about five inches in diameter, and the insect had commenced operations by gouging out, at the height of $1\frac{1}{2}$ feet from the ground, a large, irregular, transverse opening, extending fully half through the tree. From this, in accordance with the usual habit of larvæ of the same family, it had driven a tunnel down the centre of the stem as far as the crown of the root. Of course no tree could survive long after such serious injury, or, at any rate, attain anything like an average development. The grub that effected all this damage was fleshy, naked, about four inches in length, as thick as the tip of the little finger, and furnished with 16 feet and very

formidable mandibles. I have not been able to get a specimen of the perfect insect, but believe that it belongs to the *Hepialidæ*, a family of nocturnal moths, of which the grubs all prey on the roots or stems of plants. It is very nearly allied to the *Cossus ligniperda*, an insect very destructive to willow trees in England, and which is supposed to be identical with the *Cossus* of the Romans. This, classical readers may remember, was regarded by them as a great delicacy, and they were accustomed to collect and fatten it with flour for their banquets. Tastes certainly change, for the insect now before me looks any thing but inviting from a gastronomic point of view. All the hepialidæ however display a very interesting feat of instinct, at a certain stage of their existence. When digging the downward tunnel, already alluded to, the debris of the wood is conveyed by the grub to the exterior opening, and there, little by little, fastened together by silken threads, until a large mass is accumulated so as to completely close up the entrance. This done, the creature is safe from external foes, and it then descends to the bottom of the tunnel and passes into the chrysalis state. As the time, however, draws near for its egress in the winged condition, it again works its way up to the mouth of the funnel by the action of its transverse rows of spines on the sides of the cavity, and then makes an opening in the blockading mass of wood-powder. The object of this is to allow the moth to escape, and but for this wonderful precaution, it would remain a prisoner for life. Fortunately, the hepialidæ have many enemies in the shape of birds, &c., and never increase to any serious extent. Their ravages, therefore, in plantations need not afford any cause for alarm.

ART. XXV.—*Cases from the Triplicane Hospital.* Under the care of Surgeon-Major P. G. FITZGERALD, M. D., Surgeon Fourth District, Madras.

Tetanus.

PONNEN, Æt. 50, admitted on the 1st of August 1870 with an irritable ulcer on the side of his foot, said to be of six months' standing. An emollient poultice was applied.

3*rd*.—Yesterday he was sized with symptoms of tetanus, which were met by a purgative enema, followed by a drachm

of laudanum and an ounce of arrack, given every hour for four doses. The symptoms were relieved by this treatment. He slept soundly last night, and is better this morning. There is still some rigidity of the muscles of the back, but he can open his mouth and take his food without difficulty.

4*th*.—Yesterday he got four doses of the arrack and laudanum, and six half-doses of the same. Is improving. The stiffness is less, and confined to one side of his neck.

On the 7th, while sitting up in bed and being fed with some broth, he suddenly fell back in a fit and expired.

The man being a pauper and his body being unclaimed, a post-mortem examination was made, in order, if possible, to clear up the mystery of his sudden and unexpected death. On opening the trachea, a large round worm was found in it, which had in all probability ascended from the stomach, in which several others were found, and entered the glottis at the time that he was being fed with the broth. No other extraneous matter was found in the trachea.

Dislocation of the Vertebræ.

Jamoo Bee, Æt. 30, a Mahomedan woman, was admitted into the Royapettah Hospital on the 11th May 1870, with injury to her spine, caused by a bag of wheat having fallen upon her. The Apothecary, who saw her immediately on her admission, stated that there was a separation of the vertebræ at about the lower end of the dorsal region; there was partial loss of power of the left lower extremity, but not of any other part. The bladder and rectum performed their functions normally. She was placed on a perforated cot with injunctions to keep perfectly quiet.

On the 21st, I ventured for the first time to turn her over on her side, and to examine her back. There was a considerable separation of the last dorsal and first lumbar vertebræ; the lumbar vertebræ seemed to have been all twisted to the left, their spines not being in the same line with those of the dorsal vertebræ; she had, moreover, two broken ribs on the left side, the result of a former injury, for which she had not been properly treated; there was no increase of paralysis.

June 11*th*.—Is doing well, and sits up in her bed without inconvenience.

16*th*.—Is able to stand up and move about with a little assistance. The back is bent somewhat at the seat of the injury; the vertebræ are prominent, and are firmly bound together by a mass of callus thrown out around them. Being anxious to go home she is discharged.

Osteo-cystic Tumor of the Lower Jaw.

PAVADAY, Æt. 40, a spare, thin man, was admitted on the 11th of April 1869, with a large tumor, which involved the chin and body of the lower jaw, and extended on each side to within an inch of the angle of the jaw. It was nearly as large as his head, and looked like a second head growing downwards from his chin. It was hard and bony, with some soft fluctuating spots interspersed. It had been growing for several years, and its great weight at last became so inconvenient, that he was desirous of having it removed.

The operation was performed on the 15th of April, with the kind assistance of Dr. Henry King and Moodeen Sheriff. Two semilunar flaps were raised from the front and back part of the tumour, the incisions defining them meeting a little in front of the angle of the jaw on each side, and at this point the bone was divided on each side by means of a semi-circular saw and the bone forceps. A strong ligature was previously passed through the tip of the tongue, and held by an assistant, who prevented the retraction of the tongue when the genio-glossi muscles were divided. Only one artery was tied, and he lost but little blood. The operation was performed under chloroform, but as he seemed much exhausted towards the end of it, the chloroform was discontinued during the closing of the wound. Twice his breathing ceased and life seemed extinct, but a strong sharp pull at the tongue restored respiration and consciousness again. The flaps were brought together by silver sutures, and supported by pads of lint placed in the mouth. The ligature through the tongue was removed the following day, as there seemed to be no disposition to retraction in that organ after the first few hours. The healing of the wound was somewhat retarded by the sloughing of some lymphatic glands, which had been left behind, but the last suture was removed on the 15th of May, when the whole of the wound was found closed.

On the 5th of June he was discharged. There was very

little deformity, and he had recovered the power of articulating distinctly.*

Inflammation of Cellular Tissue.

In the month of April last, there were four cases of inflammation of the cellular tissue of the forearm and hand under treatment at the same time in the hospital. Three of these were relieved by early incisions, and left the hospital with the limb unimpaired; but the fourth was not so successful, partly owing to its having come under treatment only when the disease had already made considerable progress, and partly to an unexpected complication which occurred in the course of treatment.

Curpen, a coachman, aged 40, was admitted on the 21st of April 1870, with the arm, forearm, and hand enormously swollen, tense and hot, except the hand, which was cold. Seven days before admission, he hurt his little finger while cleaning knives, but continued to use his hand until it became swollen and painful. There was no localized pain in any particular spot, but a sensation of burning throughout the hand and arm. The skin of the hand and arm was covered with small blisters.

To relieve the tension of the integuments incisions were made in the palm of the hand, and along the front of the forearm; the latter incision was between four and five inches long, and as soon as the skin and fascia were divided, the soft parts beneath were forced out through the wound, springing up like a fungous mass, so great was the pressure to which they were subjected; the skin at the same time recoiling like a piece of stretched India rubber. The arm and hand were enveloped in a large bran poultice. He was ordered Tincture of the Muriate of Iron in Infusion of Quassia, with Opium and Quinine pill four times a day.

24*th.*—Tension of the skin much reduced, the oozing of blood has ceased.

26*th.*—The arm and forearm are much better, the swelling and tension of the skin much reduced, but the hand and wrist seem more swollen. Fresh incisions were made into the back of the hand, where it was found that the cellular and muscular tissue between the metacarpal bones was in a sloughy condition; a small artery was divided

* The tumor was sent to the Medical College Museum.

which bled freely, and it had to be ligatured. The fingers have recovered their natural temperature. Ordered four ounces of portwine daily and the tincture of iron to be omitted, as it seems to cause restlessness.

May 6th.—Yesterday morning, on going to the hospital, I found that profuse hæmorrhage had taken place from the wound in the forearm. The blood welled up from beneath the large slough which had formed in the wound, and had all the appearance of arterial blood. It was controlled by pressure in the brachial artery, and by elevating the arm. Taking into consideration the general condition of the forearm and hand, and the danger of a recurrence of bleeding as the slough became detached, I determined to amputate the arm immediately, before the patient was further weakened by loss of blood. Aided by Dr. King, who kindly came to my assistance, I removed the arm at its middle third, the patient being put under chloroform. Three arteries were tied, and the wound washed with a 20-grain solution of chloride of zinc.

8th.—Yesterday the dressings were all removed; the stump looked well, and inclined to heal all along the course of the incision, except where the ligatures issued. This morning, as the discharge was profuse, the dressings were again removed, and a strip of lint soaked in carbolic oil laid along the wound.

9th.—This morning bleeding took place from the inner angle of the wound. It was easily suppressed by pressure on the artery above. About 2 ounces of blood were lost. The pulse, though a little less strong than yesterday, is still good.

10th.—Last night bleeding took place so profusely, that it was necessary to apply the tourniquet to the axillary artery. This controlled the bleeding for the night, but this morning the stump was hot, painful, and distended with coagula of blood. The sutures were therefore all removed, the flaps opened, and the clots cleared away; when it was found that an artery close to the bone (probably the musculo-spiral branch) was bleeding freely. A ligature was put on it, which stopped the bleeding completely, and the flaps were again washed with a 40-grain solution of chloride of zinc, afterwards with tepid water, and then brought into apposition by a roller.

12th.—Stump discharging freely; healthy pus, without smell; pulse 116.

14*th.*—Pulse 120, stronger than yesterday. Discharge very profuse, but healthy and creamy in appearance; no unpleasant smell.

15*th.*—Not so well to-day; hot and feverish yesterday evening: weather excessively hot also; pulse 108, weak. Discharge less, but not offensive.

16*th.*—Two of the ligatures came away, the last applied being one of them; flaps healthy, kept in contact by strapping.

19*th.*—Discharge much less; only dressed once a day; flaps disposed to unite.

22*nd.*—Stump looking well; flaps partly united.

24*th.*—Yesterday there was some hæmorrhage from the stump, caused by his raising himself up in bed without assistance, and thus separating partially the tender adhesions of the flaps. It was, however, inconsiderable, and easily restrained. At my evening visit however, a much more formidable complication had taken place. Extravasation of urine was found to have taken place in the perineum. It was now found that he has been for many years the subject of stricture of the urethra, which seems to be almost obliterated from the orifice as far back as can be felt. The orifice was so small, that it would hardly admit the point of a probe, and the spongy portion felt like a hard cord until it disappeared in the perineum. He had not said anything about this malformation until he found that in trying to make water yesterday, none would come though the urethra, while a large swelling appeared in the perineum, which gave him temporary relief from the distended state of his bladder. A free incision was made into the perineum, and a large quantity of urine, mixed with blood and pus, was evacuated. He had a fair night's rest, and this morning is considerably better; passed water through both urethra and wound.

Not to protract this history by needless details, I will only mention that two more attacks of hæmorrhage took place from the stump after this; the flaps became dry and flabby, and shewed no sign of vital action. Severe rigors came on, and another abscess was opened at the root of the penis. A No. 1 flexible catheter was got into the bladder through the urethra, but owing to its small calibre, it did not prevent the urine from coming through the wound also.

He lingered on, getting gradually weaker until the 4th June, when he died. No post-mortem examination was allowed.

The repeated attacks of hæmorrhage that took place in this case were due, I think, to the previous inflammation which had extended from the hand to the shoulder, and which, although it subsided in the upper arm after the hand and forearm were freely incised, probably left the tissues in a morbid condition, or at any rate, disposed to take on easily a morbid action. Examination of the hand after its removal justified the amputation of it in this case; the soft parts in the palm and back of the hand were in a gangrenous state, and the hand could never have been of any use even had it been possible to save it.

ART. XXVI.—*Case of Congenital Atresia Vaginæ; Death; 4⅓ months after operation.* By Surgeon COLVIN SMITH, M. D., Surgeon Second District.

A. H., a girl aged 15, was admitted into the Hospital M. F. O. Asylum on the 15th March 1870, complaining of pain in hypogastric region coming on in paroxysms at intervals of an hour or two; had a sensation of something rolling about in the lower part of stomach; complained also of much pruritus. For several months has at irregular intervals complained to the Resident Apothecary of pain in the stomach, which was relieved by hot fomentations and a laxative. In December last she was treated in hospital for the same. Has lately become a delicate looking girl. Has never menstruated.

Stated that she was treated by my predecessor in 1866, who examined her, with a silver instrument. She appears to have been admitted into hospital for "Cystitis," but treated for nothing else.

On examination, an abdominal tumour is distinctly felt rising from both iliac fossæ, extending to within a quarter of an inch of the umbilicus. A large tumour was plainly felt per rectum, the lower part soft, bulging and fluctuating an inch from the anus, the upper part hard. The external organs of generation were undeveloped, there was no hymen, and

the vagina ended in a culdesac about an inch from the orifice.

"1st April, with Dr. Cockerill, made a further examination, the girl being under chloroform, and as I had no long exploratory needle and canula, did not attempt any operation per vaginam, but per rectum punctured the lowest, and soft part of the tumour with a small exploring needle, when some dark menstrual-looking thick fluid came through the canula." On the 7th idem, the girl being much in the same state as on admission, pulse 84, abdominal tumour nearly up to the umbilicus, she was put under chloroform; Drs. Harris and Cockerill kindly assisting, the urethra and bladder were raised by a catheter while the rectum was depressed. I introduced a curved trocar with canula into the centre of the occluded vagina. The tissue here was extremely dense, and considerable force was required to penetrate it; but when the instrument had passed about a quarter of an inch in, it glided easily along, and through the canula a quantity of thick chocolate-coloured fluid flowed. The uterus contracted to about two inches below the umbilicus, but the tumour in the iliac regions remained the same size. A bandage with compress was loosely applied, and the canula retained with tapes for two days, and syringed with Carbolic acid lotion. By the 12th idem the abdominal tumour had disappeared, also that felt per rectum, but the discharge was fœtid, and as the opening had contracted it was slightly enlarged; next day about an ounce of purulent matter came away. On the 14th (in the afternoon), she complained of being chilly, after which she became hot and perspired. During the night there was pain in the left iliac region, the uterus became enlarged and painful; pulse 120. Next day there was pelvi-peritonitis, and the day following general peritonitis set in. Pulse 150, tympanitis, and most distressing vomiting, which resisted all the usual remedies, until the evening of the 18th, when she appeared sinking. Two grains of oxalate of cerium were given, which checked the vomiting, and she was able to take food by the mouth, instead of being nourished by the rectum. The inflammation gradually subsided. There was afterwards slight inflammation of the parotid gland.

On the 6th May the girl was able to walk a little, and up to the 20th appeared to improve; then she complained of slight pain in right side. On the 26th the opening made

on the 7th April had almost closed, a tangle tent was introduced, after which some menstrual fluid escaped. She complained of a few small piles, and rapidly lost flesh and became anæmic. On the 6th June there was puffiness of both ankles, which soon extended to the feet; there was no bile in her motions. On the 23rd she was permitted, at her urgent request, to go to St. Thome (for change to the sea air), but when there diarrhœa set in, and she returned to the Asylum on the 4th July, in an extremely weak state; diarrhœa became persistent. She gradually sank and died on the 17th August.

Post mortem examination 10 hours after death.

Body greatly emaciated.

There was a dark green-coloured patch on the right iliac region.

Chest.—Lungs extremely pale, heart small.

Abdomen, &c.—Great omentum firmly adherent behind the pubes, where there was a great quantity of organized lymph; it was also adherent to the intestines, especially the

cæcum and ascending colon ; there was no pus within the peritoneum. The attached portion of cæcum was gangrenous, caused by a pelvic abscess, (the result of cellutitis) extending from below Poupart's ligament and running up (without the peritoneum) to the lowest point of the right lobe of the liver which was implicated and gangrenous.

The liver was pale and fatty, gall bladder distended with dark bile, stomach extremely thin and pale. Small intestines congested, cæcum gangrenous, large intestines congested. Pancreas healthy, spleen small, kidneys healthy, bladder empty, uterus and rectum all three firmly adherent together in one mass of lymph, which was removed from the body. The vagina above the occluded portion was dark-coloured and dilated. After careful dissection by the Pathologist, to whom the above mass was sent, the uterus was found to be normal in size, the os patulous, the ovaries on section showed ova in various stages of development, as well as corpora lutea of old and recent date. About four inches from the anus there was a dark spot on the mucous membrane of the rectum into which a probe passed, and which most probably (in my opinion,) was the spot at which a recto-vaginal fistula was, by nature, attempted to be formed.

DIET IN DIABETES.

IN our last number we drew attention to the value of arsenic in the treatment of diabetes. Medicines are generally considered to be less important than careful regulation of the diet in the palliation or cure of this disease, and we are therefore glad to see that the President of the Paris Pharmaceutical Society has lately published in the *Annales d'Hydrologie Médicale* a paper on this subject, and we shall give some of the results of his investigations as a suitable sequel to our former article. Since Bouchardat published the results of his labors on *diabetes mellitus* it has been an accepted principle that the physician's first care in the treatment of the disease should be to exclude from the diet all foods into which sugar enters; and also those which contain starch, which is convertible into sugar during the digestive process. It is not necessary to discuss whether we are justified in applying chemical theories about the transformation of starch into sugar to the actions of the human economy. It is an established fact that when sugar and starches are excluded from the diet of a diabetic patient, glucose rapidly diminishes in the urine, and sometimes disappears from it altogether. The alimentary indications, then, are clear. The food should be plastic, nitrogenous, animal; bread, starch, vegetables, pastry and fruits must be forbidden. For bread, generally so important an article of diet, what is called "gluten-bread" must be substituted. What is gluten-bread? The physician who orders it knows that gluten is a substance abounding in nitrogen and free from starch, and he orders gluten-bread accordingly, but what does the patient buy under this name? Frequently something which has a merely nominal connection with gluten. If we allow water in a thin stream to fall upon a handful of wheat-flour, the starch will run off and a grey elastic substance

with a peculiar odour remains in the hand. This is gluten; of which the flour contains from ten to twelve per cent. Dried, it shrinks to a very small quantity of a horny substance, with difficulty reducible to powder, insipid, and not bearing the least resemblance to an article of food. Theoretically, this is what is to replace bread in the patients' diet, and many a man who orders gluten-bread, thinks that it contains nothing else. It is, however, impossible to make this thing by itself into bread. A certain quantity of flour must be added to it; and all we can expect to get is a bread containing the maximum of gluten with the minimum of flour. There are many difficulties in the way. Gluten is excessively dear, that which is obtainable at a comparatively cheap rate from starch manufactories (where gluten is not allowed to run to waste as it formerly was) is not thought highly of, because the finer qualities of flour are not bought for conversion into starch, and besides, these establishments are not to be found everywhere. Again, bread rich in gluten, is a very uninviting food and one with which a patient rapidly becomes disgusted. The result of the whole has been that in order to supply the demand for gluten-bread, numerous fancy breads have been invented, containing a variable and uncertain proportion of gluten. Under these circumstances, it became important to discover some ready means of determining the quality of bread, with reference to its fitness for diabetic patients. The analysis of bread is a very difficult and delicate process, and M. Mayet's method is a valuable addition to our means of estimating the values of different foods, so far as their starchy constituents are concerned. His process is merely an application of well established facts, and consists in the conversion of starch into sugar, and the estimation of the latter by the ordinary saccharimetrical means. When starch of any kind is boiled with water acidulated with sulphuric acid, it is changed

first to dextrine and ultimately to glucose. The ordinary iodine test indicates when the starch has disappeared. This method has been applied to the examination of almost all the starch-containing articles of food, and tables have been constructed to show the amount of sugar yielded by different starchy aliments, and consequently which of these it is more or less important for the patient to exclude from his diet. We subjoin a portion of one of these tables, containing a considerable number of articles of ordinary vegetable diet, and showing in grams the quantity of sugar obtained from 100 grams of each, by saccharification with sulphuric acid.

Wheat Starch	83
Flour	71
Common bread dried	60
Do. fresh	50
Gluten Flour (Martin)	38 to 40
Fresh Gluten-bread made of last ...	27—70
Gluten-bread (another sample)	31—15
Dry Gluten-bread do.	32
Very dry Gluten-bread	62—50
Granulated Gluten	15—60
Gluten Vermicelli	41—60
Rice Flour...	62—50
Rice unground boiled	8
Rice-cake (home-made)	25
Potatoes, baked	8—30
Roast Chestnuts	20—80
White Beans boiled	16—60
Lentils, dressed and drained	22—50
Carrots dressed and stewed in butter ...	16—60
Pea-soup	15—60
Turnips stewed	7
Peas preserved in tins	12

Assuming that we may compare the artificial metamorphosis of starch to sugar, by means of sulphuric acid with the process which takes place in the digestive system of a patient suffering from glycosuria, such a table as we have given above enables us to lay down which starch-containing articles of diet are more, and which less, injurious. It is evident that

many samples of what is called gluten-bread are very far from being destitute of starch. One sample contains more than ordinary bread. It follows that if we are convinced that all starch should be excluded from the diet, even gluten-bread must be erased from the list and the patient fed on meat alone. We all know the repugnance which a regimen from which bread and vegetables are banished excites. The disgust is in some cases insuperable. In one case the urine became perfectly free from sugar, under a diet of meat and gluten biscuits; but the patient, a lady, declared that whatever might be the consequences, nothing would induce her to continue the restricted dietary. This case shows also that the disease may diminish and even disappear when the so-called gluten-bread, containing a certain amount of starch, forms part of the food. It may be possible, then, to replace this insipid preparation by regulated quantities of bread and vegetables so arranged and varied that the dietetic treatment can be continued for a considerable period without exciting that disgust which some months of the more rigorous regimen excite. A glance at the Table given above shows that a small quantity of bread and certain vegetables, such as beans, lentils, or potatoes, and vermicelli, eaten in moderate amount will not introduce into the system a larger proportion of starch than the consumption of the very disagreeable article called gluten-bread. Hence the physician can vary the dietary and prolong the dietetic treatment without any risk to the patient. We have seen that boiled rice, with milk or with soup, may gratify the patient's taste without risking the ingestion of any considerable amount of starch. The same may be said of potatoes in soup, of beans and peas. As regards bread, the deprivation of which is so painful to some persons, a very small quantity in the shape of a crusty loaf (in which the baking modifies in a re-

markable manner a certain proportion of the starch) will be preferable to a large quantity of gluten-biscuits. A little loaf, highly baked, weighing about three ounces, will be a great comfort to the patient and render prolonged submission to the inevitable regimen quite tolerable.

M. Mayet's practical conclusions may be briefly summed up. (1.) The use of what are called gluten preparations is not attended with benefits so decided, but that, under circumstances in which the patient's disgust compels us to modify the treatment, we are justified in relaxing somewhat the rigour of the dietary, and in allowing a very small quantity of varied starch-containing aliment. (2.) Among the substances which may be permitted without impairing the efficacy of our treatment, we may include ordinary bread, very dry and highly baked, to the extent of from 60 to 90 grams daily; rice boiled in water and served in different ways; vermicelli, and soups of potatoes, beans and peas. It must be borne in mind that the quantities of these articles should be small and only sufficient to produce *variety* in the food. Thus a table-spoonful of rice or of vegetable farina is enough. These substances undergo a great increase of volume in the culinary process, and therefore they answer the purpose of their use without introducing any considerable amount of starch into the system. (3.) The principal advantage resulting from this modification of the diabetic diet will obviously be the possibility of prolonging for months a course of treatment which our patients' disgust or the weakness of their will too often compels us to discontinue.

BROMINE.

IN the tenth volume of the *Dictionaire Encyclopédique des Sciences Médicales*, recently published, there is a paper by M. Fonssagrives on the physiological action of Bromine and the Bromides, an abstract of which may be useful to practitioners, now that two of these salts are coming into frequent use in the treatment of nervous disorders. The warning with which he starts is one too often neglected in therapeutics, namely, that it is most misleading to assume that all drugs belonging to the same group have the same physiological and therapeutical action. As the amount of dose affects the mode of action of a medicine, so also does the "posological form;" and whatever general resemblances may exist amongst members of the same class, there are differences, also, other than degrees of relative activity. These dissimilarities in physiological action correspond to different indications of treatment, and therefore deserve to be studied. The group of medicines derived from bromine have, like the iodides, a strong family likeness; but each has its own individual pecularities of physiological and therapeutical effect. In some of the bromic drugs, the bromine alone appears to act; in others the chemical combination of this element with another—potassium or sodium or ammonium—masks certain of its topical properties, probably without affecting its general action on the system. There are other salts, again, in which the secondary element has its own medicinal efficacy, as the bromides of iron, of mercury, of cadmium, of gold, the bromate of quinine, &c. To include in one common description the physiological action of drugs so dissimilar in character, could only lead to confusion. Hence it was necessary to study the effects upon the human system and upon the lower animals, first of bromine, and secondly of the bromic group of drugs, and to deduce from

experiment both what was common to all and what was peculiar to each.

Taking first bromine and the bromic compounds properly so called, the experiments of Frank, Butzke and Fournet have shewn that pure bromine acts rather powerfully as a topical irritant even on the skin, to which it imparts a brownish yellow coloration. Its vapor is exceedingly irritating to the nose and eyes, exciting lacrymation, coryza, cough, and a feeling of oppression similar to that produced by chlorine, and probably due to spasm of Reisseissen's muscles. A sensation of acridity with heat is felt on the buccal mucous membrane, which a patient of Fournet's compared to the effect of a glass of rum. This feeling sometimes extends to the throat, and along the œsophagus, as Butzke observed in his own person, after taking a drop and a half of bromine in half an ounce of water. He felt also warmth in the epigastrium and slight colicky pains, showing that the local action extended over the inner surface of the stomach and bowels. Barthez examining the bodies of animals which had died poisoned by the drug, found "the stomach contracted, the mucous membrane in folds, sometimes softened and often strewed with oval ash-colored ulcerations, frequently very small and very numerous. Towards the pylorus there were black shining patches covering "gangrenous ulcer." At the time when Barthez made his observations gastritis was still in vogue, and he may have looked at these lesions through Broussais' glasses; but it would be as impossible to deny that bromine produces local irritation as to attribute the general effects which follow its ingestion to sympathy with the irritation of the digestive canal. Desire to vomit, without emesis and disappearing in a few minutes, is partly due to this local action and partly to the nauseating smell and disagreeable taste of bromine. Appetite did not appear to be affected, even when

enormous doses of 45 to 50 drops were exhibited in two of Fournet's cases. Sometimes there were eructations and borborygmi. Pereira mentions diarrhœa as one effect of the internal administration of bromine.

This substance is absorbed like iodine and eliminated in various ways, probably by the skin, the saliva and the milk : but this subject has not been thoroughly investigated. In the case of bromide of potassium, the rapidity with which it appears in the secretions, and the length of time during which its presence can be detected in them, have been studied ; but the two drugs are not identical, and conclusions may not be extended from one to the other. When bromine has been injected into the veins of animals, its action is decidedly more active and rapid. It seems to affect principally the nervous system, evinced by dilatation of the pupil, head-ache, insensibility, convulsions, formication and muscular cramps. Bromoform would perhaps exhibit the general action of bromine distinct from its topical effects. This substance is the analogue of chloroform and iodoform, its formula is C H 3 Br, and it contains a larger proportion of bromine in the same weight than any other compound. On this account its action should be carefully studied.

Secondly, we have the alkaline bromides, especially those of potassium and ammonium, which form an intermediate link between bromine, and those bromides or bromates whose bases have medicinal actions of their own. The bromide of potassium, in somewhat large doses, produces certain of the effects of bromine, but the appearances of local irritation are absent. A slightly saline taste is experienced, with an after taste sensibly bitter ; sometimes slight nausea is felt, occasionally there are cramps, better marked in proportion to the strength of the solution. Gastralgia was observed once in 70 cases where the doses were very large, 10 to 25 grams (2½ to 6½ drachms) being

taken in 23 hours. There is a tendency to constipation rather than to diarrhœa. The hypersecretion from mucous surfaces and cephalic glands which iodide of potassium produces is much less decided with the bromide; there is little or no lacrymation, coryza or diarrhœa. The bromide of potassium is diuretic like the iodide. After doses of 6 to 8 grams (1½ to 2 drachms) more than two litres (3½ pints) of urine were passed in the day in some cases. The bromide of ammonium is said to possess no diuretic action. Under the continued influence of large doses of the former drug, the urine ultimately becomes bloody, the muscular fibres of the bladder are paralysed, and the viscus is distended with urine.

The most prominent results of the action of the alkaline bromides are displayed in the nervous centres. 1. There is constrictive headache which, where the doses are pushed to a sufficient degree, precedes intoxication. Differences have been pointed out between bromic and iodic cephalalgia; the former being a sensation of weight accompanied by constriction, with dulling of the senses and the intellect, and tendency to drowsy torpor; while the latter resembles the headache which marks the commencement of coryza, and is probably partly due to irritation of the mucous membrane lining the frontal sinuses. The bromic headache is more cerebral, less painful, but accompanied by greater heaviness and dulness. 2. We have bromic *intoxication*, analogous to iodic, and like it rapidly disappearing upon the diminution of the bromide; showing the powerful but fleeting action of the drug upon the brain. 3. There is *titubation*, due rather to the defect of motive power than to difficulty in maintaining equilibrium. 4. Various experiments have been made upon animals, frogs expecially, to prove that the bromide of potassium, directly applied to nerves or muscles, the heart, for instance, rapidly destroys contractility. The different

affections of the sensibility consist in anesthesia, sometimes partial, sometimes general ; or rather in analgesia, extending so far that the skin may be pinched or burnt without consciousness on the part of the subject. Such insensibility is only exhibited when the drug is given in large doses, and at the end of several days' administration. The stupor resulting from large doses of the bromide of potassium is very remarkable. Huette says, " Une somnolence continuelle s'empare des malades. A un degré plus élevé, les idées se troublent, le propension au sommeil est plus impérieuse. Les malades sout-ils arrachés à cet etat de stupeur des paroles incohérents sortent de leur bouche, et leur physionomie expérience cette satisfaction stupide qui caracterise le visage des idiots ; bientot le sommeil met fin à la fatigue de ce reveil momentané." In moderate doses the same tendency to sleep is observed. 5. Partial anesthesia is localized in a remarkable way upon certain mucous membranes, namely, those of the eye, the velum palati and the urethra. The reflex excitability appears to be diminished. The uvula and conjunctiva may be touched in any way without exciting attempts at vomiting or winking. This is a valuable property of the drug from which surgery has begun to profit. 6. The refrigerant or anaphrodisiac action of the bromide of potassium is one of the best established facts of its history. From it start its most valuable therapeutical uses. 7. The temperature of the skin seems to be sensibly lowered under the influence of large doses : but observers differ on this point. 8. We find a similar difference of opinion as regards effect upon respiration. It may be that these two great functions are but slightly affected by the bromide, and that when they have appeared to be disturbed in experiments upon animals, the explanation is to be sought less in a sedative action of the drug than in the depression which marks the death-agony. Huette observed in a certain number of cases

a marked reduction in the pulse: which sometimes fell to 48 and even 40. Others found that the direct application of bromide of potassium to the heart destroyed excitability in three minutes, and that when absorbed it retarded the pulse. In small doses it would drive the blood from the capillaries; in large, on the contrary, it would paralyse their contractility and the tissues would be gorged with excess of blood.

Most commonly the ill effects of bromide of potassium are very fugitive. The urine carries off this salt in abundance. The odor of bromine in the breath and saliva of persons who have taken large doses of it is explained by an analysis which obtained it from the saliva. Copious diaphoresis and the odor of bromine in the cutaneous secretion show that the substance is rapidly eliminated by the skin. Acne has been frequently observed but has been attributed to the admixture of iodide of potassium with the bromide. It is possible that the anesthesia of the velum palati and the conjunctiva is traceable to the fact that the salt is partly eliminated by these mucous membranes and produces local insensibility during its transit, but it is more probably due to diminution of the reflex excitability of the spinal cord. The excessive doses which have been exhibited have shown both the susceptibility of the mucous system to the action of the drug and also its comparative harmlessness. When ill consequences have followed its use, they are readily removable. This occurred to Namias at Venice who gave an epileptic patient 14 grams (3½ drachms) daily. Others have exceeded this quantity without unpleasant results, but these excessive doses are neither necessary nor desirable. Smaller amounts are sufficient to produce bromic saturation and to attain from the drug all the therapeutical benefit which it is capable of affording. Should ill effects ensue, it is only necessary to suspend the medicine or to diminish the dose, and they dis-

appear. It is more than possible that the alkaline base of the salt contributes to these accidents; as the introduction of from 15 to 20 grains daily of a potash salt into the blood cannot fail to alter the chemical condition of the serum. Whether there be a chronic form of bromic poisoning, as there is of iodic, distinct from this acute affection which can readily be removed, is still uncertain. One case is on record which favors the supposition that there is. A young woman of 22 took bromide of potassium for a year, consuming more than two kilograms of the salt. Her epilepsy improved, but she became cachectic and emaciated, with yellow skin and an eruption of copper-colored papules on her forehead, and finally died exhausted. The case enjoins caution.

The bromide of sodium has not been tried. It would probably have the same effect, so far as bromine is concerned, as the other salt, with less danger of undesirable consequences. With respect to bromide of ammonium Dr. Gibb drew attention some years ago to the tendency to emaciation which its use produces, with diminution of sensibility in the mucous surfaces. It causes neither diarrhœa nor diuresis, is readily tolerated, and in its toxic effects in very large cases resembles bromide of potassium.

Passing over bromides with active or poisonous bases, as the protobromide and deutobromide of mercury, the bromide of iron (specially recommended by Gillespie, an American physcian), the bromide of cadmium, the bromate of quinine, &c., the consideration of which would give no assistance towards determining the physiological action of bromine, M. Fonssagrives proceeds to discuss the class of medicines in which this drug should be placed. Trousseau and Pidoux call it an *alterative*, and class it with iodine, mercury, arsenic, platinum and the alkalies. Gubler considers that bromide of potassium is more closely allied to digitalis than to iodine in its effects; and

in this view our author concurs, although he hesitates to call the former a sedative or contra-stimulant. He considers that bromine is an additional illustration of the folly of the attempt, in the present state of science, to classify drugs, an attempt which can only be partially successful and which may be mischievous by leading to erroneous generalizations. Its use as a therapeutical agent must be determined not by its position in an artificial classification, but by its observed effects. Its properties as a poison have been hitherto satisfactorily ascertained by means of experiments upon animals, made with bromine itself, its cyanide, the bromide of potassium, &c. With the exception of the case of chronic poisoning mentioned above, its use as a medicine has never caused any ill effects which have not disappeared of themselves or been easily remedied. It has not yet been employed for homicidal or suicidal purposes. From the observations which have been made, we can deduce rules for a rational treatment of cases of poisoning by bromine or its compounds. If bromine itself have been taken, we should administer magnesia: if bromide of potassium, we should excite vomiting without delay. Should either substance have been absorbed, we shall have a *toxic* disease, variable in form, the treatment of which cannot be laid down *a priori*. Coffee in very large doses, cold effusions and cutaneous faradisation, employed simultaneously or successively, would probably prove the most useful means.

THE FRENCH ARMY MEDICAL STAFF.

We fear that the paucity of medical officers in the French Army, as well as the unfortunate system which subordinates the Medical to the Supply De-

partment, has produced a distressing amount of unnecessary suffering in the recent conflict upon the frontier. The editor of the *Journal des Connaissances Médicales* states, on the authority of Dr. Trélat, that there are but 1,000 medical officers in the whole French army, while 2,000 would be insufficient. Recent experience seems to have thrown away. After the battle of Magenta each surgeon had 175 wounded men to look after, who were not collected for four days. After Solferino it took six days to remove the wounded from the field, and each medical officer had 300 to attend to. In the late battles the losses on both sides were terrible, exceeding largely those of the Italian contests, and the want of sufficient medical assistance will be still more severely felt.

AMALGAMATION.

RUMOURS of impending changes in the organization of the Indian Medical Department have been rife for many months. Even the form which the alterations were to take was defined with remarkable precision. There was to be "amalgamation" (which has been so successful in other branches of the Government service) between the British and the Indian Medical Establishments, so far as military charges were concerned, while for civil charges there was to be a Civil Medical Staff under a Secretary to Government, who was not to be necessarily, and therefore would certainly not be practically, a medical officer. The head of the amalgamated military service in India was to be an officer of the British Service, and report went even so far as to name the gentleman who was willing—indeed more than willing—to undertake the responsibility. It is said that the British medical officers were jubilant at the pros-

pect. It is certain that the hearts of "locals" were disquieted within them. These gentlemen appear to entertain a morbid and unaccountable dread of organizations organized under the shadow of the W. O. or even in Calcutta. But so far as we have been able to ascertain, jubilation and apprehension have been equally groundless. We are informed that to inquiries on the subject recently made at the India Office, of an authority not likely to mislead or to be mistaken, the reply was that *no such changes are in contemplation*. It is impossible to doubt that the present anomalous and costly organization cannot long escape notice and amendment ; but as to the particular form which the inevitable changes were to assume, the wish appears to have been father to the thought.

REVIEWS.

On Ailantus Excelsa, a new Indian Remedy. By Mr. Narayan Daji, G. G. M. C. Bombay, 1870. Pp. 15.

We have received from the author a copy of this very creditable monograph on the Ailantus (or, as it used to be spelt, Ailanthus) excelsa. The tree is pretty widely distributed along the Coromandel Coast, and attains a considerable size. It was by Wight and Arnott referred to the N. O. Zanthoxylaceæ. Thereafter it was regarded as a member of the Rue family, but, as pointed out by Mr. Daji, it is now more properly placed in the order Simarubaceæ. The bark of the Ailantus has long been used in native medicine; and why our author should term it "a new Indian remedy" we are rather at a loss to understand. In the Arcot and Salem districts, it is the chief ingredient in a popular native remedy for murrain and other diseases in cattle, and it is frequently prescribed by native doctors, on this side of India, in cases of dyspepsia. Mr. Daji's list of synonyms and botanical description of the tree are somewhat lengthy, and remind one of a period when time was of less value than at present. His directions as to the collection and preservation of the bark, which is the part of the tree used as a medicine, seem very good, and his account of its characteristics seems to have been worked out with great care. The active principle in the bark is said to exist in the shape of a reddish, or orange yellow glistening amorphous deposit, located amongst the meshes of the liber. This substance is readily soluble in water, and extremely bitter, and its active properties are said to depend on an uncrystallizable "azotized, bitter principle, possessing an acid nature," which our author terms *Ailantic acid.* The average quantity of the acid obtained from the bark was about ½ oz. per pound, and its chemical properties are detailed at considerable length. We do not mean however to enter into these, but rather pass on at once to the practical uses of the preparation. It is considered by Mr. Daji to be a perfect substitute for Quassia, acting in doses of from 1 to 3 grs. "as a tonic and stomachic." In doses of from 3 to 5 grs. it is said to have

a marked alterative effect, and to increase secretions, especially that of the liver, "as indicated by the stools changing their colour to yellow." We have our doubts however about this, and think it quite as likely, that the hue of the stools is changed by the colouring matter of the drug. In doses of from 15 to 30 grs. it is said to "occasion uneasiness about the stomach, nausea, vertigo, vomiting and purging." The list of diseases in which it is said to have proved useful, is nearly as lengthy as the catalogue appended to advertisements of Cockle's or Parr's Pills, and we think it a pity that Mr. Daji did not, in the first instance, confine its virtues within more modest limits. There is a fine air of oriental colouring in this part of the paper, which may cause practical men to look with suspicion on what we believe to be really a very useful drug. To be brief, it will be found a very good bitter tonic, which may, like quassia, be prescribed with iron; and in case of any of our readers wishing to give it a trial, we annex Mr. Daji's formula for the preparation of an infusion :

"Ailantus bark bruised	... 2 drs.
Cold water	...10 oz.

Infuse in a covered vessel for half an hour and strain. *Dose*—from 1 to 2 fluid ounces twice or thrice daily."

We shall be glad to see further accounts of our author's researches in Indian drugs, as he is evidently an accomplished and careful observer, in all that relates to their natural history and chemical properties.

Reports on the Progress of Practical and Scientific Medicine in Different Parts of the World. (For the year beginning June 1, 1868, *and ending June* 1, 1869*).* Edited by HORACE DOBELL, M. D., Senior Physician to the Royal Hospital for Diseases of the Chest, &c., &c. Assisted by numerous and distinguished Coadjutors. London: Longmans, Green, Reader and Dyer, 1870. Pp. 645.

(*Continued from page* 216, *No. IX.*)

FRANCE is allotted 95 pages, and deserves them. They are divided into sections according to subject. In Physio-

logy we can only notice MM. Legros and Onimus' experiments on intestinal contractions. Some of their results, which may give us useful hints in practice, we may briefly mention. They found that ice-cold water arrests the peristaltic movements, which are promoted by hot water, or by a strong solution of chloride of sodium. "Croton oil brings contractions, which, superadded to the contracture, drive all matters before it. Ipecacuanha acts in a similar way." Small doses of atropine augment, large ones abolish peristaltic movement. Morphine retards without abolishing contractions. In the General Pathology section there is a long discussion on the vaccine virus, in which we notice that sheep-pox may be communicated either by inhalation or through the digestive tract. Ten centigrams of sheep-pox virus mixed in a drench and given a little at a time, set up a disease precisely the same as if it had been communicated by contagion in the ordinary way. We call attention to this statement, because we felt inclined to doubt the possibility of communicating variola by making the patient swallow a variolous crust—a practice said to be in use by inoculators in North-western India. "Vaccine itself," the reporter continues, "although not infectious, may be transmitted notwithstanding by the same double path. Vaccine drawn in by the breath in a pulverulent condition has produced horse-pox in a horse. Vaccine mixed up in water and swallowed by a colt, has had the same positive result; so that the lung and the gastro-intestinal tube may be considered as pathways to vaccination as well as to sheep-pox."

That turpentine is an antidote to phosphorus, appears to be established by M. Andout's and M. Personnes' observations and experiments. A man having swallowed, first, some phosphorus, and immediately afterwards about 15 grams of turpentine, was not poisoned by either. Experiments were then tried on fifteen dogs, and every one which did not take the antidote died; while of those who took it, two out of ten only died. A woman swallowed phosphorus scraped off twelve lucifer-matches, in order to destroy herself. Four grams of turpentine, administered by M. Andout, obviated all ill effects. There are a few other points of practical importance which we shall very briefly mention; but, on the whole, we have been disappointed with this French section, in which we hoped to find a little less diagnostics and a little more therapeutics. We do learn, however, that the well-known symptoms of iodism are not due to the use of

pure iodide of potassium, but to the action of the gastric juice upon a mixture of the iodide and iodate, setting iodine free. The reparatory action of the iodides is attributed by M. Rabuteau to their power of diminishing urea. He found a diminution of nearly 40 per cent. effected by the exhibition of iodide of potassium. M. Pecholier has found creosote in small doses, at the commencement of typhoid fever, powerful to lessen the intensity and duration of the disease. Two cases of traumatic tetanus appear to have been cured by copious diaphoresis, effected by means of moistened quick-lime. There is a lamentably small halfpenny-worth of practical bread to a wearisome quantity of theoretical sack. The Scope-and-Graph school may be laying the foundation of improvements in the healing art, but we do not see much above ground yet. Minute physiology and complicated machinery have done little as yet for the cure of disease.

Dr. Althaus undertakes to summarize what has been done in GERMANY, and contrives to condense all which he considers noticeable into 30 pages. The anatomical part is a mere list of books and papers on anatomical subjects. Physiology fares little better than Anatomy; but we may pause to mention the result of Dr. Jürgensen's researches on the influence of cold baths on animal heat in the healthy body. He found that the most considerable cooling does not occur during the bath, but after it. "In baths of 98° the temperature of the rectum increases during the time the bath is taken; it falls after the bath, but not nearly so much as after a bath of 48° to 51°." Under Chemistry we observe a statement of M. Preyer's that atropine is an antidote to hydrocyanic acid, the two drugs exercising antagonistic actions on the pneumogastric nerve. Two salts of papaverine, one of the opium-alkaloids, have been investigated by M. Leidesdorf. The phosphate is unsuitable for subcutaneous injection; causing diffuse inflammation around the puncture. The hydrochlorate is decidedly hypnotic and narcotic, but does not act for from five to seven hours after exhibition. It relaxes the muscles and is therefore adapted to excited and violent patients. It diminishes the pulse, sometimes from 100 to 76 or 64. Its effect continues from 24 to 48 hours. In therapeutics we find some useful hints. Prof. Von Langenbeck has found secale cornutum useful in treating aneurisms. The effect of this drug in contracting unstriped muscular fibres suggested its employment, and the result seems to have been satisfactory. In one case three centi-

grams of the watery extract were injected beneath the skin covering the tumor, every three days for six weeks, (so that about half a drachm was used), with the effect of relieving the symptoms and reducing the aneurysm. In another case a small tumour on the radial artery disappeared after one injection of 15 centigrams. The treatment of typhoid fever by cold baths appears to have been most successful in Liebermeister's hands. He lost only five per cent. of those who came under his care early.

"Symptoms of severe nervous disturbance are very rare with this treatment; the pulse is not nearly so much accelerated as usual, and generally falls soon after the commencement of the baths; the number of alvine evacuations is also less, meteorism is not so bad, and intestinal hæmorrhage and perforation less frequent. Unconscious evacuations of urine and fæces scarcely ever take place, because the mental disturbance is not so severe as otherwise. Grave affections of the lungs are rare, but if they occur the baths need not be interrupted; even in genuine pneumonia they were continued in the same manner, and the results were very favourable. The number of such treated up to the present time is 40. Decubitus (?) is much rarer than with the usual treatment."

A fever-patient gives off more heat in a cold bath than a healthy person, and produces more heat in a tepid or warm bath. The colder the bath the greater the production of heat; so that a short or slight withdrawal of heat effects not a lowering but an actual elevation of temperature. The method employed consists in making the patient sit for ten or fifteen minutes at a time in a full cold bath at 70°. If patients are very weak a shorter time is ordered, and this is found more effective than a longer duration at a higher temperature. Cold affusions are neither so pleasant nor so efficient as the bath: but wet sheets are used by Priessnitz are useful. Four successive wet sheets, in which the patient remains from ten to twenty minutes, have about the same effect as one full bath at 70° for ten minutes. Next to baths of cold water we come to baths of hot sand, recommended by Dr. Schwabe, for Rheumatism and Allied Affections. The patient lies in a box on a layer of hot sand four inches thick and is covered with the same material until he is buried in it completely, except his head. The result is very copious diaphoresis and removal of the rheumatism after four or five weeks' perseverance. The Report concludes with a very full and interesting account of chloral, to which we refer any one wishing to learn the history, uses and mode of administra-

tion of this drug; which, if it do not become altogether discredited by the reaction which must follow excessive laudation and absurd misapplication, is likely to prove the most valuable addition of modern times to our repertory of medicines.

A section on HOSPITALS, INFIRMARIES and DISPENSARIES gives us Sir J. Simpson's views on hospitalism which, being utterly inapplicable to this country, need not detain us. New institutions are also particularized, and very many interesting cases are detailed, taken either from the printed Hospital records or from the pages of the professional periodicals. ICELAND is celebrated for echinococci which appear to be its staple production. The Report on the island is written by Dr. Hjaltelin and is chiefly taken up with the parasite. Of the frequency of the disease there is no question, though doctors differ as to its exact degree—a point obviously difficult to be ascertained. The best authorities seem to think that "every sixth or seventh" Icelander is affected with echinococci. Dr. Finsen fixes the extent of involuntary hospitality at 1 in 26 9. The personal experience of the reporter in his hospital during one year would fix the proportion at nearly one in five; and in his private practice, "more than one-tenth" were cases of echinococcus. Sheep suffer from the entozoon even more than their betters. "Traces of it are found in more than every fifth adult sheep; nearly all the peasants have ascertained that this parasite may be found in every third sheep that is more than three years old." In one district nearly every adult sheep is affected and every third adult human being is said to have hydatids. It is the custom of the country to eat raw smoked mutton, and we have all been accustomed to accept without question the theory of Dr. Cobbold and other helminthologists of the production of echinococci in the human subject. Hydatids in man come from the eggs of the tænia of the dog and wolf, which are swallowed with food or drink and hatched in the intestinal tract, whence they bore into a vein and are carried to the liver or some other organ and become hydatids. This theory is supposed to have been established by experiment. Sheep and dogs have been fed with food containing these eggs, and have become infested with echinococci. This, however, is obviously not absolutely conclusive. As Dr. Hjaltelin puts it "it is quite impossible first to slaughter an animal, in order to ascertain whether it is affected with echinococci or not, and afterwards to make a feeding-experiment on it:" and our readers will be surprised to hear that

the ordinary theory is not accepted by many most experienced Icelandic physicians. These gentlemen believe the disease to be hereditary, and that production of the entozoon by "spontaneous generation" is probable. The former belief at any rate is supported by some facts, and we are ourselves aware of one case in which the *ascaris lumbricoides* was found in an infant, fed from the breast, a few days after birth. We are inclined also to agree with the reporter's opinion that Harvey's axiom, *omne vivum ex ovo*, "as well as the more modern one 'omnis cellula ex cellulâ, will fall to pieces before the close of the next decennium."

The treatment of echinococci may be internal or operative, the former being the older and having been to all appearance successful in many cases. Mercurials internally and externally were employed, and sometimes ethereal oils, especially that of rosemary; and the results seemed to be highly satisfactory. Tincture of kamala is recommended by Dr. Hjaltelin, who asserts that this drug taken internally is capable of reaching the parasites and of killing them, especially in the early stages. Operative treatment consists in opening the tumour either with a small "troisquart" or even with a bistoury; but some prefer the use of caustics for the purpose. Evacuating the fluid contents of the tumour with a small trocar and elastic syringe under water, so as to exclude air from the sac appears to have been attended by the best results. The chief difficulty seems to lie in the diagnosis. In the liver hydatids may attain considerable magnitude without producing any well-marked symptoms. Uneasy sensation in the hepatic region, pain in the right shoulder or at the clavicle and jaundice indicate (in Iceland) the presence of echinococci in the liver.

Dr. Dobell intended to devote a considerable amount of space to INDIA, and "sought for representatives in Bengal, Madras and Bombay." Professor Ewart advised him to get copies of the Indian medical periodicals and sent him his "best wishes." From Madras he does not seem to have received either advice or good wishes. His search for our periodicals in London was painfully unsuccessful—a fact which he considers "anything but creditable either to India or to England." Why it should be discreditable to India that the profession in England with characteristic "insularity" should not think it worth their while to make themselves acquainted with Indian medical literature is not

apparent. However, the result has been that the Indian section of the Reports consists of a few abstracts from the *Indian Annals of Medical Science* and the *Indian Medical Gazette*, and a promise of "a full report next year from a special representative."

Mr. Heather Bigg contributes 50 pages on MECHANICAL APPLIANCES, INSTRUMENTS AND INVENTIONS, which shows the wonderful progress which has been made in these particulars, but which contains little of much practical value to the Indian surgeon.

(To be continued.)

MEDICAL MISCELLANY.

*Cincho-Quinine.** By W. T. Wenzell, Chemist.

(Read before the California Pharmaceutical Society, March 14th, 1870.)

The article sold under the above name is stated to represent all of the alkaloids naturally contained in Calisaya bark. It is also asserted that all of the cinchona alkaloids possess equal febrifuge and tonic properties; and that quinia only acquired the rank of superiority as a febrifuge by reason of priority of discovery, a statement which is also incorrect, inasmuch as cinchona was discovered as early as 1810 by Gomez, whereas quinia was discovered ten years later by Pelletier and Caventon.

The "cincho-quinine" is said to be composed of bark alkaloids as follows:—1. Quinia. 2. Cinchonia. 3. Quinidia. 4. Cinchonidia. 5. Other alkaloidal principles present in the bark.

The claims advanced as to its superiority over the sulphate of quinia are, namely, that "cincho-quinine" contains the whole of the active febrifuge and tonic principles of Calisaya bark; that it exerts the full effects of sulphate of quinia in the same dose, without causing cerebral disturbances; that it is nearly tasteless, and less costly than sulphate of quinia. The dose of the preparation is left to the discretion of the physician, with the direction that it may be administered in doses varying from five to thirty grains.

The apparent insolubility of the "cincho-quinine," its slight bitter taste and large medicinal dose (30 grs.), have led me to investigate the true nature of the article presented. "Cincho-quinine" is put up in imitation of sulphate of quinia in ounce bottles. It appears in the form of white friable scales, which are almost tasteless, only a slight bitterness being perceptible. When placed upon red litmus paper, and a drop of alcohol added, the colour of the litmus was promptly restored.

*See p. 238, No. IX.

It proved combustible without residue. When dissolved in water, with the intervention of sulphuric acid, the solution tasted analogous to one of sulphate of cinchonia, and the solution, when strongly acidulated with the acid, possessed in very slight degree only the optical phenomena of fluorescence and epipolism. Dr. Bill's test of ferrocyanide of potassium gave the known reaction for cinchonia. "Cincho-quinine" was nearly insoluble in ether. Twenty grains of the preparation were dissolved in water with a sufficient quantity of sulphuric acid, and the solution subjected to Liebig's ether test, which dissolves quinia, quinicia, and cinchonicia, also portions of quinidia and cinchonidia if a large excess of ether be employed. The etherial solution thus obtained by successive washings with ether, left on evaporation and drying solid residue, weighing about half a grain, possessing alkaloidal properties. This residue, when dissolved in dilute sulphuric acid and water, and treated with Brande's chlorine and ammonia test, will indicate by its green coloration the presence of quinia, quinidia, and quinicia. The test responded in this instance affirmatively. In order to determine which of the alkaloids produced the coloration, one portion of the solution was tested for quinidia by Van Heijningen's test of oxalate of ammonia, and another portion was tested for quinidia by Dr. Vry's test of iodide of potassium, but both gave negative results. Therefore the alkaloid detected by Brande's test is quinicia, which was confirmed by the application of Herapath's optical and chemical tests of the iodo-sulphates of the cinchona alkaloids. One grain of the mixed alkaloids obtained by Liebig's test from "cincho-quinine" by thorough exhaustion with ether, was dissolved in a fluid drachm of water sufficiently acidulated with sulphuric acid. The solution was then mixed with an equal bulk of alcohol, the mixture warmed to about 100° F., and treated successively with tincture of iodine. The several (7) precipitates which appeared on cooling were amorphous resinous substances soluble in alcohol, and did not exhibit in the least degree crystalline structures. The precipitates first obtained were reddish in appearance, analogous to the salt of iodo-sulphate of quinicia; the last precipitates possessed the purplish tint belonging to the iodo-sulphate of cinchonicia. The absence of all crystalline characteristics of iodo sulphate salts thus obtained from the alkaloids extracted by ether from "cincho-quinine" point conclusively to the absence of quinia, quinidia, and cinchonidia in

the sample under examination ; and we can safely assert that " cincho-quinine" is in reality only cinchonia containing about 2 per cent. of quinicia and cinchonicia.

" Cincho-quinine," although having the advantage of being nearly tasteless, does not contain quinia, quinidia, and cinchonidia, and therefore does not represent the whole of the active principles of the bark.

It cannot exert the full effects of sulphate of quinia in the same dose, inasmuch as the stated dose of " cincho-quinine" is from 5 to 30 grains.

Although " cincho-quinine" appears to cost less than sulphate of quinia, it does not follow that commercial " cinchonia," sold at four times its value, is a desirable substitute for quinine in an economical point of view.

And, lastly, one very important principles hould by no means be lost sight of, namely, that a physician should always know what he is prescribing, and therefore the substitution of a remedy of less efficiency and uncertain medicinal value is altogether unwarrantable and often hazardous.—*Pacific Med. and Surg. Journ.*, April 1870.

Rate of circulation in man.

THE rate at which the blood circulates through the body may be estimated from the size of the left ventricle as compared with the total quantity of blood in the body. The total quantity of blood in the body bas been found by weighing, before and after death, criminals executed by decapitation. From such observations made by Lehmann, Weber, and Bischoff, the total quantity was found to range from 9 lbs. to 10 lbs. If we assume the latter quantity, and take the capacity of the left ventricle at three ounces, it is plain that a quantity of blood, equal to that contained in all the vessels, will have passed through the heart at the end of 53 strokes, which, if the pulse be assumed at 75 to the minute, will correspond to 42 seconds. This represents the time occupied by the entire circulation of the blood. The time occupied by absorption, circulation, and secretion combined, may be set down at less than four minutes, as appears from the following interesting experiment devised by Professor Macnamara, of the Royal College of Surgeons

in Ireland, at which I had an opportunity of assisting. An old soldier, a patient of the Meath Hospital, suffering from hydrocele, was trained by us to urinate at the word of command, at intervals of one minute into a succession of test tubes. When his training had been completed by a few days' instruction the sac of the hydrocele was emptied, and injected with two drachms of tincture of iodine. The patient then urinated at intervals of one minute into the test tubes previously prepared, commencing at one minute after the injection. The fourth test tube responded faintly to the starch test for iodine, and the fifth and subsequent tubes showed its presence very distinctly. From this experiment it is evident that the entire process, viz., absorption by the *tunica vaginalis*; transmission by the lymphatics and capillary veins to the heart; re-transmission by the renal arteries to the kidneys; secretion of urine and its transmission to the bladder by the ureters occupied less than four minutes, or about five times the entire time required for the circulation of the blood.—*Prof. Naughton in Dub. Quart Jour.*

On the Treatment of Incontinence of Urine in Childhood and Youth by Collodion. By Sir D. J. Corrigan, Bart., Physician in Ordinary to the Queen in Ireland.

I presume only to offer in this short paper a contribution to our list of adjuvants in the treatment of incontinence of urine during sleep, in childhood and youth. In the list of maladies not fatal there is, perhaps, not another so productive of misery and anguish as this affection.

The child of five years of age feels acutely his misfortune when he involuntarily wets his bed, and fears to meet his nurse in the morning with his face of shame.

The schoolboy who is subject to it carries about with him through his day of study and recreation a load of misery.

The climax, however, of anguish is, when the boy, grown into the young man, enters civil life, college, or the army, and dreads with fear and horror the discovery of his misfortune, though in no way his fault.

To such a degree has this terror risen that it has been

sufficient to deter a young man from persevering in a course of life that otherwise presented all that he could desire.

The treatment of this affection may be divided under two heads: the first, the constitutional treatment, being that conducted on the principle of strengthening the whole system, in the hope of including in it the erring organ: the second, that of dealing directly with the organ in fault.

With the first, or that of constitutional treatment, I do not deal at all in the present paper.

The second head of treatment, or that of dealing with the organ at fault, has two subdivisions. The first having reference to medicines supposed to exert a specific action on the bladder, such as blisters, belladonna, copaiba, and to preparations of iron acting with a double effect, local and constitutional, and the second relating altogether to mechanical means of treatment, all difficult or impossible to be carried out. It is with this last I now propose to deal.

Various mechanical means of treatment have been recommended, for instance, a perineal truss. It is scarcely necessary to observe that its application is attended with insurmountable difficulties, the impossibility of exactly adjusting its pressure, its interference with rest, and the exposure attendant on using it.

Another means has been proposed, and it is said in some cases successfully used, of applying along the urethra on the outside and under surface of the penis a portion of bougie which is kept in its place by bands of adhesive plaster applied round the penis, with sufficient pressure to prevent the urine's forcing its way along the urethra.

It is scarcely necessary to observe that the use of such mechanism is utterly impracticable in nearly all cases of this miserable affliction in childhood, boyhood, and early manhood.

The young sufferer naturally turns to the use of mechanical means for relief, and we have on record instances in which the poor child, under terror of shame and discovery, has tied a ligature of cord around the penis, and under the influence of the same feelings has concealed his sufferings until gangrene has set in; and Gross relates a case in which a brass curtain ring was used, which became imbedded in the inflamed corpora cavernosa, and was removed years

afterwards in fragments, along with a calculus lying in a pouch behind it.

Long time since I tried to close the opening of the prepuce with adhesive plaster, or court plaster, and in one case, that of a young man of twenty years of age, who had entered the army, and who was intelligent and careful, the result was favourable, but there were great difficulties about it. The application took time, and could not be carried into successful effect with boys and children.

The mechanical treatment to which I now wish to draw attention is the treatment by collodion. It is most easy of application, occupies scarcely a minute, and can be carried out at school, college, or elsewhere, in perfect privacy.

All that is necessary is, while the prepuce slightly curved up is held with the left hand, to smear over the little cup thus formed by the extremity of the prepuce with collodion by means of a small camel's hair pencil or blunt end of a penholder. Almost as fast as applied the collodion solidifies. In contracting it draws closely together the edges of the prepuce, and thus the exit for the escaping urine is closed.

A boy of eleven years of age has, after one lesson, been able to use the collodion, and has used it every night carefully and diligently, so anxious has he been to cure himself of what he considered a disgrace. A fortnight's use is sometimes sufficient for the cure. A relapse is easily dealt with. A solution of gutta-percha in chloroform would seem at first sight to be equally applicable, but it is not. The solution of gutta-percha is much longer in hardening, and it possesses no contractile powers.

When the child or youth desires to pass water the little wedge or cap of collodion is easily removed with the finger nail.

When I first used this collodion application, my expectation was, that the bladder would act so forcibly against it as to cause sudden pain, and oblige the patient to jump at once out of bed and quickly remove the collodion, and that he should then repeat the application before returning to sleep.

I was agreeably disappointed. There was no pain; no awaking; but on rising in the morning the prepuce was

found slightly distended with urine, and the collodion was removed without difficulty.

This unexpected result would lead us to infer that the action of the muscular contractile fibres of the bladder has little to do in causing the nocturnal incontinence of urine in childhood, and that the escape of the fluid is rather due to want of apposition in the sides of the canal of the urethra, or to a feeble state of the circular fibres which are supposed to constitute the sphincter of the neck of the bladder.

Acting on this view I have recommended the child's bed to be made in such form as that while preserving the usual slope for head and shoulders, the rest of the bed shall gently rise as an inclined plane, from hips to feet, so as to allow the urine in the bladder to gravitate towards the fundus, rather than towards the trigone.

In all the instances in which I have used the collodion application the prepuce has been, as, I believe, is nearly always the case in children and boys, projecting over the glans, or in a state that may be designated as natural phimosis. But I do not anticipate any difficulty in using the same application in cases where the corona glandis might be exposed, as the collodion would, I should expect, act equally well over the orifice of the urethra as over the opening in the prepuce.

It may be presumption, but I cannct conclude without expressing a strong opinion against one part of the management of these cases, which is very frequently practised through the best motives on the part of mothers and nurses, and sanctioned by the recommendations of some medical authorities—the practice of awaking the child at stated intervals to pass urine.

I have never seen any benefit whatever from it, and I think I have, on the contrary, always seen aggravation of the affection from it, not unreasonably to be explained, on the principle that such practice is really training the bladder to empty itself at stated periods, when the object is that it should be trained to retain its contents.—*Dublin Quarterly Journal.*

Death from Inhalation of Chlorine Gas. By CHARLES A. CAMERON, M. D., Professor of Hygiene in the Royal College of Surgeons in Ireland; Analyst to the City of Dublin, &c.

IN Taylor's comprehensive work on "Medical Jurisprudence," no cases of death from the inhalation of chlorine gas are given. It is, indeed, stated that the French chemist, Pelletier, died from the effects of chlorine gas taken into his body—whether in the gaseous condition or dissolved in water I know not. The following particulars relative to a fatal case of poisoning—if I may use the term—from chlorine may not prove uninteresting, and perhaps it may prove to be the first case of the kind on record.

A small ship, lying in the river Liffey, took in a cargo composed partly of salt cake (sulphate of soda), partly of chloride of lime. The former was stowed away in bulk in the hold; the latter was stored in casks, which were placed on the salt cake. On the morning of the 18th January, 1870, one of the three sailors who had passed the previous night in the forecastle, was found dead on the floor of that cabin. His companions were comatose; but under treatment on board the vessel, and subsequently at Sir Patrick Dun's Hospital, they recovered.

On the evening of the 18th January I was requested by the coroner, Dr. Nicholas C. Whyte, to assist his medical adviser, Dr. R. W. Egan, in investigating the cause of the death of this sailor. We ascertained that two of the casks of chloride of lime had burst and their contents had been scattered, and several of the staves were charred. This accident might have occurred either from the chloride of lime having been over-heated by the salt cake—which is often shipped in so hot a state that it can hardly be handled—or from water having got into the casks.

The forecastle was rather a large one for a small schooner—its space being 940 cubic feet. During the night there was fuel consumed in a small stove, but the products of combustion must have readily escaped through the opening—which was four square feet—in the roof. Those facts disprove the statements which were made, to the effect that the sailors were poisoned by the gases generated in the stove.

The body of the deceased was conveyed to the place where Dr. Egan performs his autopsies. The surface of the corpse was well washed (ammonia being added to the water), so as to remove from it every trace of chlorine, and the *post mortem* examination was then commenced. The following were the principal morbid appearances.

Face.—Pale, not livid, pupils dilated; white froth oozing from the mouth and nostrils; the lips blanched and somewhat swollen; the tongue and gums blanched, the latter appearing as if they had been completely bleached. The epithelium was soft, and in some spots gone in the case of the lips, tongue, gums, and palate.

Neck.—Deep veins very full.

Lungs.—Congested, not very dark; the bronchial tubes full of frothy sanguineous matter; the trachea inflamed. The lungs otherwise normal. All the internal venous system full.

Heart.—Remarkably fine and healthy; left side quite empty; right side full of dark blood.

Stomach.—Healthy, as are all the other abdominal viscera. This organ was perfectly empty.

Head.—Veins of scalp full; scalp and dura mater uncommonly adherent; surface of the brain and its membrane only slightly congested; sinuses full; substance of brain very firm, and in all respects healthy.

During the examination a tube was introduced into the trachea, and pressure having been applied to the chest, a bloody and very frothy liquid, possessing a slight odour of chlorine, was evolved through the tube. On cutting into the ventricles of the brain a very strong and unmistakable odour of chlorine was evolved. No odour of the gas was perceived in the abdominal cavity.

Here is what probably occurred on the morning of the 18th January :—The deceased was awakened from his sleep by the irritative action of the chlorine on his respiratory organs; he struggled out of his berth, became sick (vomit was found on the floor, and not a particle of food in the stomach), got a spasm of the glottis and died from apnea. Perhaps violent and rapid inflammation of the larynx might have occurred. Ammoniacal gas has been known to produce

death by the intense inflammatory action set up immediately after its inhalation.

The autopsy was made thirty hours after the body was discovered; and it is not a little remarkable that after so long a period the chlorine should be so easily recognized in the brain.—*Ib.*

Venesection in Puerperal Convulsions.

We are tempted to use venesection in cases of puerperal eclampsia by the recommendations of authors and of so many practitioners—by clinical traditions in short—as well as by the appearances of great congestion observed in the head and face during the progress of the attacks. The purple, livid face and lips, and tongue; the congested conjunctivæ; and the duskiness of the skin, which is often observed; suggest abstraction of blood as a measure of relief. If we analyse our apprehensions, however, we find that extravasation of blood upon the brain is what we chiefly dread; and if we examine the records of autopsies we find that such a contingency is extremely infrequent, and probably associated in the majority of cases with fatty degeneration of the blood-vessels of that organ.

Nor can it be said that cerebral extravasations are infrequent because of venesection, for statistics show that we may assert the fact in cases where this treatment has been discarded.

Moreover, it may safely be said that a majority of the severe cases of eclampsia occur in patients who are anæmic, and whose subsequent histories display tendencies to hydremia, and that a roborant treatment with iron is most generally indicated after the immediate dangers of the confinement shall have passed. It is obvious that copious abstraction of blood, during the progress of these attacks, must therefore unfavourably influence the future convalescence of many of these patients.

Another and natural argument for venesection at the present day, may be found in the likelihood that it may remove some of the poisonous principles which are supposed

to affect the nervous centres; but we may eliminate these by other channels, and meanwhile powerfully control their influences by chloroform, until we shall have terminated the labour.

Still, in patients of a plethoric habit, and more especially in cases where we suspect that atheromatous degeneration may be present, the moderate abstraction of blood may be a judicious practice, and not liable to do harm. But large and repeated bleedings do not seem to me to be indicated. Where there are evidences of anæmia, the abstraction of blood should be resorted to with the greatest hesitation.

In a great majority of my cases blood has been taken, though rarely by venesection, and in moderate quantities. In most wet cups have been used, a process applicable in various parts of the body, which adds the advantage of counter-irritation to the treatment, and measures accurately the amount of blood which is withdrawn, without the risk, so common in venesection, of taking more than is desired.

I find myself resorting less frequently to this practice even, or with less confidence in the abstraction of blood in each succeeding year. In some cases it has seemed to me that the application of dry or wet cups over the kidneys has favourably influenced the action of diuretics.—*Dr. T. G. Elliott's Obstetric Clinics.*

Case of multiple pregnancy resulting in the birth at term of three healthy children.

A VERY interesting case of triple pregnancy has occurred in the practice of M. Depaul, who devoted to it an entire clinical lecture, chiefly on account of some peculiarities which are not usually met with in cases of this kind. In most twin pregnancies, and *á fortiori* when there are three fœtus, women do not as a general rule reach full term. In M. Depaul's case, on the contrary, pregnancy was near its normal termination, and he saw the patient for the first time in the ninth month.

He was struck at the first glance with the large size of the abdomen, and especially by the considerable infiltration

of the lower limbs, the labia and the abdominal wall. With this exception, the general health was excellent, and the urine was free from a trace of albumen. The patient refused to submit to any examination until the pains set in. When they came (on a Sunday evening), the infiltration had increased still more. For three months the patient had occupied an arm-chair, and it was with great difficulty that she was placed on a bed for the examination. The uterus was very much distended. Auscultation revealed two heart-beats, not isochronous and quite distinct. The existence of two infants was not surprising; it was known that the woman had, in her first confinement, given birth prematurely to twins, and in her second to one child of very large size, extracted by the forceps and dead. It was said to have weighed ten pounds.

During the night, uterine contractions occurred at long intervals unattended with much pain: in the morning digital examination showed that dilatation was then complete. After having waited for some time, as no further progress was made, M. Depaul ruptured the membranes and sent for ergot, of which he administered two grams (half-drachm), not only to assist expulsion, but also with a view to post-partum hæmorrhage, which is to be apprehended in cases of this kind where the uterus has been inordinately distended and returns to its normal dimensions with difficulty. At the end of half-an-hour the pains were a little stronger and a fœtus in the first position was expelled. A double ligature was applied to the funis. A second head presented. After a little while, this second child was expelled, but in the direct occipito-sacral position, with disengagement of the occiput posteriorly, an unusual circumstance, especially with a child of medium size.

But then, M. Depaul, placing his hand on the abdomen, felt a still large, fluctuating tumour, which left no doubt of the presence of a third child, which was scarcely expected. It also presented with the head in the first position, and its expulsion was rapidly effected. The first two children were girls, the third was a boy. A ligature was also placed upon the third cord.

To complete delivery, M. Depaul tried traction of the cords one after the other. The placenta of the last fœtus came away first without difficulty, by traction upon the last funis.

A single mass constituting the placenta of the first two fœtus then came away easily. In other respects the labor presented nothing unusual.

Although we sometimes see different sexes in multiple pregnancies, it is well known that as a general rule the fœtus are of the same sex. But in this case, it is a more interesting fact that multiple pregnancy reached full term; involving the retention of three children, for nearly nine months, all fully developed. The infiltration and dyspnœa which marked the close of pregnancy are little surprising, when we take into consideration the mass which the uterus contained. The placenta weighed 1,652 grains; the weight of each child may be estimated at six pounds; and the weight of ammotic fluid should be added, which certainly amounted to three pounds at least. These make up a total of 24 pounds contained in the uterine cavity.

In spite of the distension, the uterus contracted well. It is probable that the ergot acted its good part. This is a fact worthy of remembering in cases of twins, which are much more common than triplets.

We may notice that the three fœtus presented by the head, which is not usual. We may also remark the posterior disengagement of the occiput, which was effected quickly and without any unfavorable result. The case, in short, is an interesting one of a triple delivery, satisfactorily accomplished, yielding three fine lively children.—*Journ. de Méd. et Chir.*

Losses in the Italian Campaign of 1859.

Dr. Chenu, who obtained the prize of the Academy of Sciences for his statistical work on the Crimean War, has received a similar honor for his paper on the Italian campaign. He gives the following official figures of French losses during the three months the campaign lasted, killed, 2,536; sick lost sight of, 1,128; wounded, and died in hospital, 5,010. There were nearly 20,000 wounded, 17,000 on the field of battle. The author estimates the losses of the Sardinian army, which had 4,922 wounded, at 2,800 dead

or missing. The wounded and sick of the Austrian army would exceed 40,000, 5,400 died on the battle-field. The missing were 17,000.—*Jour. de Conn. Méd.*

Discrimination of real from apparent Death.

M. Laborde read a paper on this subject before the *Académie Impériale de Médecine,* in July last, the substance of which is as follows:

If we plunge a well-polished steel needle to a sufficient depth into the tissues of a living man or lower animal, after a time variable in duration but generally very short, the needle loses its metallic brilliancy to a greater or less extent, becoming tarnished by oxidation. If, on the contrary, a similar needle be thrust into the muscular masses of a dead body and left undisturbed for twenty minutes, half an hour or an hour, it remains free from all stain upon its surface. The complete absence of oxidation and its accompanying phenomena is an unvarying sign of real death.

The Hypodermic use of Ergot for Post-partum Hœmorrhage.

By Frederic D. Lente, M. D.

It occurred to me some time ago that one of the most important applications of the hypodermic method of medication would be in the use of ergot for the arrest of *post-partum* hæmorrhage. We here wish the most prompt effect of the drug attainable, while the irritabilliy of the stomach, usually present in severe cases, is apt to cause a rejection of the remedy; or, if retained, the vital powers are at so low an ebb, absorption is tardy or perhaps entirely suspended. Intending to try the experiment myself at the first favorable opportunity, I suggested it to several friends engaged largely in obstetric practice, all of whom regarded the suggestion as valuable, but none of them, so far as I know, have put it to the test. I now desire to bring it more formally before the profession by the recital of a case in point.

Mrs. E. D. was delivered by me a few days since, after a natural labor, of a male child of more than average size. The *placenta* followed soon after with but trifling assistance. Almost immediately after, although my hand never left its grasp of the uterus, fluid blood gushed forth in large quantity, and, within a very short time, the patient was blanched and almost pulseless and insensible. The following means were resorted to promptly: Head on a level with the body, kneading the uterus with one hand while the other was passed into the vagina, and the fingers into the uterus, to turn out any clots which might be there, and to stimulate contraction, repeated twice; cloths wrung out of ice water, applied in succession and at short intervals to abdomen and thighs; Squibb's Extract of Ergot in half dr. and dr. doses; passage of a ball of ice into the uterus and held there, afterwards into vagina; ice swallowed *ad libitum*; partial compression of aorta by the edge of the hand grasping the uterus; no stimulants. The uterus would contract firmly enough under these provocatives, but soon relax and become doughy. Finally, injected under the integument of thigh twenty-five drops of the ergot. Within four or five minutes, there seemed to be a more *tonic* contraction of the uterus; that is, it relaxed less frequently; at the end of thirteen minutes, the organ becoming more flabby, injected about thirty-five drops. But I did not notice any decided effect from this unless it was exerted in the prevention of further hæmorrhage, for the patient had no further trouble.

In this case, the hæmorrhage had, in a great measure, ceased it will be observed, before the injection was resorted to, therefore it is not demonstrated that the latter exerted any decided influence. In a similar case, I should use a half drachm, and repeat as often as necessary, until the specific effect of the remedy was obtained; the twenty-five drops do not make a greater bulk than about fifteen minims. Before commencing this paper I was not aware that ergot had ever been used hypodermically for any purpose. But, on taking up the October number of the *Richmond and Louisville Journal*, just received, I find an article alluding to an experiment of Prof. Langenbeck recently performed for the cure of aneurism by this method.—*N. Y. Medical Record.*

Transfusion successful in a Case of Post Partum Hæmorrhage.

By Thomas E. Beatty, M.D., M.R.I.A.; M.D.,T.C.D., Hon. Causa; Ex-President of the King and Queen's College of Physicians in Ireland; Ex-Professor of Midwifery, and formerly Professor of Medical Jurisprudence, Royal College of Surgeons in Ireland.*

Mrs.———, aged twenty-four years, a very handsome, tall, well-made lady, had a premature confinement of her first child at the fifth month, in January 1867. She became again pregnant, and was delivered of a large healthy boy, at the full time, in July 1868. She nursed her child for nine months, and was again pregnant in September 1869. Towards the end of November of that year, she had discharge of blood from the vagina without pain, which came on every night, and lasted till morning, in small amount, and then disappeared during the day. She was kept in bed and directed to apply vinegar and water in her napkins, and to take five grains of gallic acid two or three times during the night, as required. Sometimes two or three nights would pass over without any bleeding, and then for a few nights it would return. In January of the present year the intervals became longer, but still there were occasional returns, which were always checked by the gallic acid and cold applications. In this way the month was passed. She became larger, and the uterus could be felt above the pubes. A distinct placental souffle could be heard about the middle of the month, but the fœtal heart was not audible. She was now allowed to get on a sofa in her room during the day and there was no further hæmorrhage. On the 18th of February, finding herself so well, she went to her drawing-room, where she still observed the recumbent posture, and did the same for four days.

On the morning of the 22nd of February, I was sent for at 7 o'clock ; and on my arrival, I found that she had been seized with labour an hour before, accompanied with profuse hæmorrhage. She had no nurse ; her mother was alone with her. A six month child was expelled, alive, and lying in an ocean of blood. The patient was pale, pulseless, and cold as marble. The placenta was still in the uterus. Upon making

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* Read at Obstetrical Society, April 9th, 1870.

pressure on the abdomen, a very large coagulum of blood was expelled from the vagina; the uterus felt firm; and on tracing the cord up, the os uteri was found closed to the size of a two-shilling piece, holding the placenta within. A slight draining of blood continued to flow. The only stimulant at hand was a bottle of sherry, of which I gave her three glasses in rapid succession. It was very plain that she was in imminent peril, and I despatched a messenger to summon Dr. Denham, who came to my assistance without delay. Before his arrival, I gave her a drachm of ergot in more wine, and had jars of hot water applied to the feet. On consultation with Dr. Denham, we agreed, that as there was still a draining of blood going on, it was necessary to remove the placenta. This I requested him to do, as his hand was smaller than mine, and would more easily enter the uterus,which was only developed to the sixth month of pregnancy, and the os uteri was closed upon the umbilical cord. With very considerable difficulty this was accomplished, while I took charge of the uterus above, and made pressure to insure its contraction. A quart of vinegar and water was thrown up the vagina with a syringe, and all bleeding then ceased. Our endeavours were now directed to restore the exhausted vital energy of our patient. A pint of warm beef-tea and a glass of brandy were thrown up the rectum, and hot brandy and water were given by the mouth freely. Strong beef-tea was swallowed at intervals by our patient, but nothing seemed to revive her failing powers. The pulse never returned, and the same corpse-like coldness of the surface continued. Quart bottles filled with hot water, and covered with flannel, were placed in the axillæ, and along both sides, and under the knees, while the hot jars were kept to the feet. More brandy and beef-tea were thrown up the rectum, and were taken freely by the mouth, the stomach retaining everything. Sighing and tossing about began, and signs of sinking became manifest. It was now 1 o'clock in the day. Six hours had elapsed since her delivery, and no appearance of amendment had yet manifested itself. I felt convinced that she must die unless her downward course was checked, and I saw no other chance for her but transfusion. I knew Dr. Robert M'Donnell (who fortunately lived close at hand) had the apparatus for transfusion, and was skilled in the operation, and I summoned him and Mr. W. Colles, and Dr. Denham to a consultation. We met at 2 o'clock, and I laid

my views before them. They all saw the urgency of the case, and the necessity for the operation. But just then a slight flickering of pulse was felt at the wrist, and the carotid artery gave a little stronger impulse to the finger, and it was judged right to wait some time longer. The pouring in of nourishment and stimulants was continued, and the external warmth was continued. Up to 6 o'clock matters remained in the same state, but after that every bad symptom became manifest. She became insensible; the gasping and sighing were continual, and the restlessness and tossing were constant; the countenance became ghastly, and the jaw dropped. All trace of pulse had long vanished, and death seemed very near at hand. Finding matters in this state, I determined not to let her die without making the only effort that in my mind could save her, and I again summoned the same gentlemen to her aid. Mr. Colles and Dr. R. M'Donnell arrived at 9 o'clock, but Dr. Denham was not able to attend.

It was now too manifest that she had not many minutes to live, and we proceeded to perform transfusion. Her husband readily offered to furnish the blood, and about ten ounces were drawn from his arm by Dr. R. M'Donnell. This as it flowed into a common bowl, was agitated briskly with a glass rod, in order to separate the fibrine; and the agitation was kept up after the full quantity had been drawn, and for some minutes after, until a large coagulum of fibrine adhered to the glass rod. During all this time the bowl was kept floating in a basin of hot water. The blood was then strained through a muslin cloth, and all the fibrine was thus separated. All this was done in the parlour, and the blood thus prepared was carried up to the patient's bedroom. The difficulty of the operation now commenced. The patient was as a corpse, bloodless; there was no trace of vein to be found in her arm. A ligature tied round above the elbow showed nothing. By feeling cautiously, what we imagined to be a vein was perceived. Dr. M'Donnell, who performed this operation with that skill, coolness and dexterity for which he is remarkable, now adopted the expedient of pinching up a fold of skin at the bend of the arm, and then running a narrow bistouri through it, split it up, leaving a wide gaping wound in the skin, which displayed the veins at the bottom, resembling small flat dead earthworms. The median basilic appeared to be the largest, and under this he passed a long acupressure needle, so as to ele-

vate the vein, and prevent it escaping during the remaining steps of the operation. The difficulty now was to open this small, flat empty vein without transfixing it. This he most dexterously accomplished by means of a fine pointed pair of forceps, with which he seized the anterior coat of the vein, and then with a fine tenotomy knife, the back of which was kept in contact with the vein, he succeeded in inserting its point into the vein, and slit it up above the point at which it was crossed by the subjacent needle.

The bowl of blood (which, during this necessarily tedious proceeding, had been kept floating in hot water) was now brought to the bed-side. The injecting apparatus was of the simplest construction. A common brass enema syringe that holds about two ounces, such as is used for self-administration, was fitted with a fine india-rubber tube coming off from the side. This was about a foot long, and terminated in a fine glass tube four inches long running to a fine point at its extremity.* I held the bowl containing the blood with my left hand, and with the right I held the brass syringe standing upright in the blood, and keeping the lower end of it well pressed to the bottom so as to prevent the possibility of any air gaining access to the interior. Mr. Colles worked the piston slowly and cautiously. The instrument was filled with blood till it ran out of the nozzle, and Dr. M'Donnell proceeded to introduce the glass tube into the vein ; but this was very difficult to effect, for although a very sufficient opening had been made into the vein, it was so flat and collapsed that some time elapsed before he could accomplish his object. At length he succeeded, and Mr. Colles urged the blood forward by lowering the piston. About six or seven ounces of blood were thus poured into the system of the patient. It was intensely interesting to watch the effect produced by the introduction of this vital fluid. The first change I noticed was the improvement in respiration, the long laboured, gasping, sighing effort that had been so distressing to witness became more calm and like what natural respiration should be. This began to appear when about half the quantity of blood had been injected. The countenance became less ghastly, and imminent death seemed warded off when the last portion of blood had entered her vein. The restlessness and tossing still continuing,

* The glass tube was used in order to facilitate the detection of any bubble of air, if such should gain entrance into the apparatus.

I gave her thirty drops of Batley's solution, and repeated the dose in half an hour; a third dose had the effect of producing sound sleep, from which in six hours she awoke warm and conscious, with a distinct though very fast pulse. She asked for food, and ate a good breakfast of tea and toast. 23rd, 12 o'clock.—Has had beef-tea and brandy twice; says she is quite well. Her countenance was bright and cheerful; pulse 140, small. She now complained of soreness of both hips, and on examining them, both were found to be burned by the hot bottles so freely used on the previous day. Two of these had escaped from their woollen covers, and during the tossing and insensible period had come into contact with the skin covering the hips. The right hip was most extensively burned, the slough which was subsequently detached from it left a deep ulcer, eight and a half inches in length by five and a quarter in breadth.* The burn on the left hip was about quarter the size. This will give a good idea of the condition of insensibility in which this patient was during the latter part of the previous day and night, up to the time of the operation. The low state of vitality to which she was reduced, contributed no doubt to intensify the effect of the hot bottles, for it is hard to imagine that water even at the temperature of 212° could produce so very deep an eschar as was the result of this burn.

10 o'clock, p. m.—She has slept all day from time to time, and has taken plenty of nourishment. I left a draught of muriate of morphia to be given if necessary.

24th, 8 o'clock, a. m.—She slept all night without any narcotic; pulse 120; looks bright, and makes no complaint, but of the hips; the arm gives no annoyance. Six p.m.—Has had beef-tea and toast freely all day; the bowls acted well, and slight lochia are present.

25th, 8 o'clock, a.m.—Had a very good night; pulse 115; ate a hearty breakfast; bowels acted well; voice strong; countenance good; no complaint of the arm, which healed up most kindly in a few days.

26th.—Another excellent night; pulse 100; ate half a roast chicken for dinner, and drank a glass of sherry.

From this time she progressed steadily, and after being

* As I write now on the 8th of April, a large ulcer still exists on the right hip.

out several days to drive in a carriage, she left town for the country on the 6th of April.

A most important point in the history of this case is the simplicity of the apparatus with which it was performed. A few shillings would cover the cost of the entire. Like many other highly important operations it is all in the using, not the costliness of the tools. It serves to show that there is no such difficulty in safely performing transfusion as we have been led to imagine, but that when the principles which should govern the operator are fully comprehended it rests upon his dexterity and skill to carry them out, and not upon a complicated and unwieldy piece of machinery. Dr. M'Donnell accomplished, with his simple apparatus, what others possessed of elaborate machines have failed in achieving. This example of what may be done by good brains and skilful hands will, I hope, induce others to undertake the operation of transfusion, but not without a full knowledge of the essential points to be looked to, and avoided. In reading the history of the operation just detailed these points will all appear, and I will not prolong the communication by their repetition.—*Dublin Quarterly Journal.*

MEDICAL INTELLIGENCE.

(General Orders by the Governor in Council.)

Allowances—Acting Appointments.

G. O. G. No. 186 of 14th June 1870.—The following extracts from General Orders by the Government of India are republished:—

Simla, the 21st June 1870.

The following Notification from the Financial Department is republished for general information :—

No. 489, dated 19th May 1870.

The following extract and copy of Notification, dated 2nd September 1842, are published for general information:—

Extract from a despatch from the Right Hon'ble the Secretary of State for India, to the Government of India in the Financial Department,—dated London, the 24th March 1870, No. 103.

Para. 2. I however consider it objectionable that any acting officer should be allowed the full salary of an office for any period antecedent to the date of his permanent appointment thereto, and I have therefore to request that you will notify that exceptions to the rule on the subject, which were published in the *Calcutta Gazette* of the 3rd September 1842, will no longer be permitted, except in the cases of Military Officers acting in staff appointments for Officers on leave on medical certificate, who, under the 13th clause of the Furlough Rules of 1854, are entitled to full salary after six months.

Notification,—dated Fort William, 2nd September 1842.

No. 223 *of* 1842.

The following Rule, passed by the Hon'ble the President in Council in the Financial Department on the 17th ultimo, under the orders of the Hon'ble the Court of Directors, communicated in their Despatch No. 5 of 1842, in that Depart-

ment, under date the 9th February, is published in General Orders :—

> Rule.—When an officer has been temporarily holding a Civil or Military Staff appointment in consequence of the absence of the fixed incumbent on sick leave within the limits prescribed in the Absentee Rules of the 29th July 1840, and the latter proceed to Europe, or otherwise vacate the appointment during absence, the *locum tenens* shall not be entitled to any higher allowances by reason of such vacancy, and in the event of his being permanently appointed to the office in which he has been officiating, he shall receive the full salary of that office only from the date of his permanent appointment.—(G. O. G. G. No. 580 of 1870.)

Pension Warrant Officers.

G. O. G. No. 193 of 21st June 1870.—The following extracts from General Orders by the Government of India are republished :—

Simla, the 3rd June 1870.

With the approval of the Right Honorable the Secretary of State for India, the Right Honorable the Governor-General in Council directs that the rates of invalid pay for Warrant Officers who elect to reside in India, after ceasing to belong to the effective list, will, as in the case of the Invalid Establishment, in future be only granted to those Warrant Officers whose disqualification for active service has not been occasioned by intemperance or irregular habits, which must be certified to by the medical attendant, the officer under whom the applicant may be serving, the head of his department, and the medical invaliding committee.

The same rule will be applicable to the members of the Medical Subordinate Department in regard to their invalid pension.

In the event of Warrant Officers or members of the Medical Subordinate Department being considered disqualified by conduct or habits for the invalid scale of pay or pension, they will be restricted to a scale of pension equivalent to the

retiring pension of their rank and length of service converted into Indian currency.

The following will be the rates of retiring pension in India :—

	Rs.	A.	P.	
Deputy Commissary	150	0	0	per mensem.
Assistant Commissary. ...	100	0	0	,,
Deputy Assistant Commissary.	75	0	0	,,
Conductor...	62	8	0	,,
Sub-Conductor.	50	0	0	,,
Honorary Assistant Surgeon.	125	0	0	,,
Senior Apothecary.... ...	83	5	4	,,
Apothecary, 1st class. ...	66	10	8	,,
Ditto. 2nd ,, ...	50	0	0	,,
Assistant Apothecary. ...	30	0	0	,,

(General Orders by the Commander-in-Chief.)

Convalescent Depots—Forms.

Adjutant General's Office, Head Quarters Calcutta, 22nd March 1870.

* * *

No. 55.

Complaints having been received at Head Quarters, from Medical Officers in charge of Sanitaria, of the meagre and scanty details often forwarded to them from regiments and batteries regarding the cases of convalescents sent from the plains, the Commander-in-Chief is pleased to direct that the annexed form of Nominal Return of men proceeding to Convalescent Depots shall be substituted for that now in use.

This return (which will be made out on demi-royal paper) must be filled in by Commanding and Medical Officers of corps and batteries, and sent, in duplicate, with the men ; at the end of the season one copy, completed by the Medical Officer in charge of the depot, will be returned to the regiment or battery concerned, and one copy will be retained at the depot for record.

Regimental No.	Rank and Names.	Completed Year of: Age.	Completed Year of: Total Service, years.	Completed Year of: Service in India, years.	Conduct and Habits.	Reason for sending the men to the Hills: Disease.	Reason for sending the men to the Hills: When and where contracted.	Reason for sending the men to the Hills: How long ill on present occasion.	Treatment.	Any other information connected with the man's previous medical history.	Remarks at Depot: Returned to Regiment.	Remarks at Depot: Died.	Remarks at Depot: Invalided: Change.	Remarks at Depot: Invalided:	Remarks at Depot: To remain at depot for another period.	Number of times in hospital at depot.
250	Sergt. John Smith.	25	$8\frac{2}{12}$	$5\frac{3}{12}$	Good,&c	Anæmia from Ague.	4 years ago, at Nussera bad Bombay Presidency.	4 months.	Quinine, iron, and other tonics. — Wine, beer, &c.	Has never been a strong man, and besides slight admissions for agues has suffered from remittent fever, with congested liver. Has had prim. and second. Syph.			Anæmia.			3
130											Recovered & to return to regt.					0
180																
320												Died of abscess of liver.				2
560																
														Disease of Heart		4
															For a second season.	3

N. B. The first six columns will be filled in in the Orderly-room.

President,
Members.

Adjutant.

Commanding——Regiment

Surgeon.

Original

Roll of Invalids.

——Regiment.

at ——

Information to be given carefully, and not more than twelve names entered on one sheet of paper.

To be sent in duplicate, one copy to be retained at depot and the other returned to the regiment at end of season.

TO CORRESPONDENTS.

MR. J. C. DOUGLAS. *Received.*

BOOKS, &c. RECEIVED.

Dublin Quarterly Journal, *February and May* 1870.

Edinburgh Medical Journal, *April and May* 1870.

New York Medical Record, *November* 15, 1869, *and April* 1, 1870.

Gazette Médicale D'Orient, *June.*

Indian Medical Gazette, *September.*

Journal des Connaissances Médicales, to *August* 30.

The Secretary Madras Branch of ROYAL MEDICAL BENEVOLENT FUND SOCIETY OF IRELAND *acknowledges with many thanks receipt of the following Donation and Subscriptions.* C. A. Harvey, Esq., (Don.) Rs. 20; Sub. 1870-71, Rs. 10; W. S. Fox, Esq., Sub. 1870-71, Rs. 10; Dr. G. E. Whitton, Sub. 1869-70 and 1870-71, Rs. 40; Dr. A. McClorg, 1870-71, Rs. 10; Dr. D. J. McCarthy, 1870-71, Rs. 20.

THE MADRAS

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No. XI.—NOVEMBER, 1870.

ORIGINAL ESSAYS.

ART. XXVII.—*Case of Hepatitis with Complications.* Under the care of Surgeon Major P. G. FITZGERALD, M. D., Surgeon Fourth District.

(Communicated by Inspector General Indian Medical Department.)

CAPTAIN G., R. E., Bengal; age 34 years; service fifteen years; in India 11 years, 4 months; temperaments anguineous; habits temperate.

Captain G. arrived in Madras on the 19th August from Ootacamund, and I saw him shortly after his arrival. He seemed somewhat fatigued by his journey; his legs as far as the knees were enormously swollen and pitted on pressure; his breathing was short and hurried on using any exertion; the liver was much enlarged and tender to the touch; it extended downwards to within an inch of the umbilicus, and upwards to a similar distance from the nipple; the lungs sounded clear on percussion; the heart's action was deficient in strength; the area of cardiac dulness not enlarged or displaced. The bowels were said to be costive and urine, until leaving the Hills, copious. He brought no medical history from his last medical attendant, but I learn from him that he came to Madras on privilege leave for the

benefit of his health, which had suffered seriously from jungle fever in Bengal, and that he was advised by his medical attendant here to go to Bangalore. From Bangalore, after a residence there of about a fortnight, he was sent to Coonoor. From thence he was sent to Ootacamund, and finally was ordered down to Madras again, for the purpose of getting sick leave to sea or to Europe.

There are no symptoms pointing clearly to abscess in the liver. He says he had no shivering fits since he first came to Madras. The urine is highly albuminous, of sp. gr. 1015 and scanty in quantity. He was ordered at first 10 grs. of Chloride of Ammonium twice a day, which produced some dark-colored stools, but after the second dose it was discontinued, as it did not seem to agree with him. The nitro-muriatic acid with Spts. Æther. Nitros. was ordered instead and also in the form of lotion to his side, and his legs were bandaged.

21*st*.—He slept badly on the night of the 19th, and looked pale and exhausted yesterday. His breathing was more laboured. His food consists of beef-tea, eggs, mutton-chops and pigeon baked together, arrowroot; allowed to take some brandy and water when faint, or hock and soda water if he prefers it. Last night he took a draught containing ʒ ss. of chloral which procured him a sound sleep, and this morning he expressed himself greatly refreshed, and looked altogether much better. Had some swelling in the back yesterday, which has quite disappeared to-day.

To take gin and water instead of the brandy, and as his bowels have not been thoroughly moved for 48 hours, to take a podophyllin pill to-night.

22*nd*.—The pills acted freely on the bowels, producing several motions, in the first of which there were scybala. The excreta are deficient in bile and are of a pale yellow color. Yesterday he had in the afternoon pain in the upper part of the sternum, with laboured breathing, which was relieved by a draught of Ammonia, Spirits of Nitrous Æther and Camphor mixture. Ten drops of Tincture of Iron were added to each draught of the acid mixture. Appetite capricious; swelling of legs diminished; urine still scanty and albuminous.

23*rd*.—Says he slept badly last night, but I saw him sleeping soundly at 12 o'clock. He looks pale and fatigued

this morning; has no appetite; bowels moved twice in the night.

24*th.*—Last night his bowels were moved several times, involuntarily; thinks it was owing to the acid mixture. His intellect was dull and confused; when sitting in his chair he thought he was in his bed. The œdema has spread to his body and to the skin of the penis. He however looks better this morning than he did last evening; mind quite clear now. Ordered the following instead of the acid mixture.

℞ Infus. Buchu. ℥ xvi.
Spts. Juniper. ℥ iv.
„ Æther. Nit. ℥ vi.
A wine-glassful every fourth hour.

Although the prognosis in this case is very unfavourable, and it is doubtful if he will live until an opportunity occurs of going to sea, I think it my duty to bring him before the Standing Board without delay, so that there may be no obstacle to his availing himself of the first opportunity that may present itself for proceeding to Europe. I have therefore given him the usual certificate for submission to the Standing Medical Board, recommending an immediate return to Europe, and that he should be permitted to embark from Madras and be absent two years.

August 25*th.*—Last night, as he was restless and disinclined to sleep, the remaining half of the chloral draught was given him. This morning he looks and feels better; his mind is clearer, and he is able to express distinctly what he wishes to say, which he was at times unable to do yesterday. His bowels have been twice moved since yesterday evening, and the urine is more copious; pulse stronger; swelling of legs still very great.

August 26*th.*—Last night he was not given any chloral, as he was sound asleep at 11 o'clock, but he woke up soon after, and was very troublesome, insisting on its being given to him, as he said he could not go to sleep again without it. He had, against my wish, taken a pint of moselle at dinner, and this, with the gin which he takes, probably excited him over much. His bowels were moved several times, the motions being scanty and indicative of some irritability of the bowels. The urine was not obtained separate from the

motions. The following was prescribed instead of the previous mixture.

℞ Decoct. Glycyrrhizæ ℥xii.
Liq. Am. Acet. (B. P.)
Spt. Æther. Nit. āā ℥iii.
Syrupi Scillæ ℥ x. ℿ
A wine-glassful every 4th hour.

Skin soft and cool, sometimes a little moist; the œdema of legs unchanged.

27*th.*—Last night he was rather refractory, and at 11 o'clock I found him sitting on the side of his bed. He had been calling for me to put leeches on his shoulder, which he said pained him. I easily got him to lie down, and then gave him the draught of chloral, which soon put him to sleep. He awoke once or twice during the night, and took some beef-tea. This morning he is wonderfully better to all appearance. His mind is quite clear, and his face is without a trace of pain or suffering. He has some cough occasionally, which I attribute in part to his persisting in remaining nearly naked at all times. Dry cupping is ordered to the loins.

28*th.*—He slept last night without the chloral draught, but as he took no nourishment during the night, he looks rather fatigued this morning. Has passed a fair amount of urine of a clear amber colour. Bowels still moved four or five times in the 24 hours.

He is anxious to go out for a drive, but I do not think him strong enough to bear it. The feet and prepuce were pricked with a needle, and a good deal of the serum let out, which diminished the tension of the skin.

29*th.*—There is no material change in his symptoms. The serum continues to flow copiously from the punctures made yesterday. He looks stronger than he did yesterday.

31*st.*—Yesterday the urine was more copious and contained a smaller proportion of albumen. He was very anxious to go out for a drive, and did so, but the carriage shook him more than he anticipated, and he looked fatigued, and was rather irritable at night. He was given half a drachm of chloral at bed-time, but he thinks it has lost something of its effects. The scrotum, which was enormously

distended, was punctured with the needle. His appetite continues good.

September 2nd.—Capt. G. embarked on board the *Simla* this morning.

[This Officer went to sea and proceeded as far as Galle, whence he returned immediately to Madras. The remainder of the case is given by Dr. Macrae, Acting Surgeon, Third District.]

September 10th, 1870.—This officer returned from Galle yesterday and landed in the evening. Having examined him, I found respirations 45 per minute: occasional teasing cough, percussion clear in front and right side down to two inches below the nipple; on left, and under the clavicle behind right side, clear; left dull below the middle of the shoulder blade. He always sits leaning, being quite unable to lie down.

Liver much enlarged downwards, no tenderness on pressure. Abdomen soft, not containing fluid. Legs and feet enormously distended, clear serum oozing through many points where the needle had been used a fortnight ago; appetite pretty good; tongue furred in centre and back, clean and moist in front; bowels said to have been purged very freely in consequence of medicine taken on board steamer.

Urine normally acid, quantity passed apparently below average, sp. gr. 1015, colour of dark sherry with a little deposit. On trying it with heat and acid about one-fourth was albumen. Under the microscope, some kidney epithelium and a few casts consisting of fine hyaline material, with fatty granules scattered through it.

He is taking from 8 to 10 ounces of gin in the 24 hours, diluted with water, and beef-tea, puddings, chops, &c., whatever he fancies, and as much as he cares to take.

℞ Tinct. Digitalis.
,, Mur. Fer. āā ♏ xv.
Potass. Acet. grs. xx.
Acid Acet. ♏ v.
Aquæ puræ ad ℥i. ter in die.

11th.—He wanders a good deal, is drowsy, but constantly wakens with a feeling of choking from want of breath. Respiration 50, pulse 120, weak and small; hands and feet

cold and clammy; is very restless; bowels opened once this morning, loose and dark; urine estimated at about fifteen ounces in the 24 hours. 6 P. M.—A urinous odour from the fluids passing through the puncture in his legs.

12*th, Morning.*—Breathing very much oppressed; pulse very small, extremities cold and clammy; very little urine passed. Bowels not opened since yesterday morning.

℞. Pulv. Jalap Co. gr. xxx. immediately.
℞. Am. Benzoatis grs. xx.
Spt. Juniperi ♏ xl.
Aquæ ℥ i. ter in die.
Dry cupping over kidneys. Mustard over heart.

Evening.—Died suddenly, after clutching at his heart region and one or two gasps.

13*th*, 11 A. M.—*Post-mortem Examination.*—Hypostatic congestion; trunk and limbs well rounded off, partly from œdema, partly from flesh and fat.

Chest.—Left pleural cavity contained about three pints of bloody serum. The lung was covered with a false membrane, beautifully honeycombed and very easily detached, the lower three-fourths were quite solid, being in a state of red hepatisation. On section, the lobules were very distinct, the white boundary lines of fibrous tissue standing out prominently through the dark red solid surface of the proper lung tissue. The upper part of the left lung and nearly the whole of the right were healthy.

Heart enormously enlarged, weight estimated at 16 ounces after removing all clots. The right auricle and two *venæ cavæ* were distended with black clot. The wall of the right ventricle was as thick as that of a normal left, and its columnæ carneæ were like those of an ox. In its cavity was a large and decolorised but soft clot, continuous with a tough white clot passing up along the pulmonary artery to its bifurcation. The wall of the left ventricle was 1½ inch thick without being contracted. The lower half (apex) of its cavity was occupied by what appeared like a fibrous tumour closely adherent to the inner surface of the ventricle and separated from the general cavity, which contained some black clot, by what appeared at first like the endocardium.

On examination, however, it was found that the apparent tumour, about the size of a hen's egg, consisted of fibrine,

like that in an aneurismal sac, adherent to the apex of the cavity, and separated from the general blood current by a false membrane. On section the centre of the tumour was found to be fluid, consisting of softened and disorganised fibrine and looking like curdy pus.

The valves were all healthy.

Liver.—Lining membrane healthy, surface smooth, nutmeg looking, with much yellow, *very large;* on section, very yellow and granular looking, easily crumbling under the finger.

Stomach distended with wind.

Ilium.—Chronic congestion of the mucous membrane of its lower end, wall generally thinned.

Colon seemed healthy. Kidneys much enlarged. At the extremities of both, the cones were distinct; while towards the centre it was difficult to distinguish between cone and cortex. The section of the cortical portion showed much the same color as that of the liver; capsules non-adherent.

Head not examined.

Art. XXVIII.—*Non-Professional Estimates of the Progress of Medicine.* By J. C. Douglas, Certificated in Animal Physiology and Experimental Physics, Government Department Science and Art, G. B. Telegraph Department E. I.

It is an opinion held by many, that Medicine is progressing very slowly if at all, and that the rate of progress is certainly not such as might be legitimately anticipated from the great number engaged in its pursuit. There certainly exists distrust of Medicine, particularly of its theories, and this distrust is shared by some at least whose opinions are worthy of consideration. If proof of such distrust is required, the public papers afford it in the manner in which they refer to medical theories,—the currency of popular sarcasms need only be referred to as a fact. Comte expressed his belief that Biology would not progress satisfactorily while entrusted solely to the medical profession, training in an art, in his opinion, unfitting for the abstractions of

science; and a writer in the *Times* has stated in referring to the Registrar General's returns:—

"It will probably be within the knowledge of the public that the scope of these Returns has recently been much enlarged, and it is hoped that before long the co-operation of other countries may be obtained for the work in hand. England is now divided for registration purposes into upwards of 2,000 sub-districts, and the deaths are classified to some extent according to ages as well as causes. 'It will be evident,' says the Registrar-General, 'on surveying the tables, that they give as comprehensive a view of the diseases plaguing the population dispersed over the soil of the kingdom as a series of photographs could give of the clouds that sweep over its skies.' This is true, no doubt, and when the area of observation is enlarged, and the field of view extended, we may hope for some important results. At present, though we must surely be on the right track, it must be confessed that the progress we have made in predicting or arresting disease is not considerable. The object of all science, it has been said, is to foretell the future, but whence diseases come is as unknown to us as it was to our forefathers. Occasionally, as in the case of vaccination, we hit upon a real discovery, and the Registrar-General tells us in these very Returns that over a vast tract of England the once terrible scourge of smallpox "is practically a nullity." But as to other forms of pestilence we are still in the dark. Nobody knows why measles at one time or scarlet-fever at another should ravage our large towns, or why typhus should be destructive one year and unheard of the next. It is said, indeed, that medical science has made little or no advance in the treatment of diseases, and that the mortality arising from them is affected, if at all, more by general sanitary conditions than professional skill. We have begun to regard certain maladies as preventible or controllable, but we can control them only by arresting contagion. Medicine has no more antidotes or specifics than it had in the last generation, and if we appear at any time to be within reach of a successful theory, the prospect is soon destroyed by a theory of an opposite character. It is clear, however, that we can do no better than go onward on the path before us. By such Returns as these we are at least ascertaining facts and the knowledge of laws. One thing is certain,—that the condition of the public health does improve. There are some plagues and some diseases which we have actually outlived, and the ravages of epidemics generally are infinitely less than they were a century ago, if we may credit the loose records of those times. It must be remembered, too, that this progress has been made in spite of certain unfavourable conditions, such as the aggregation of large numbers of people in great towns, with the mani-

fold exigencies of manufacturing industry. We have, in fact, learnt that certain things and certain practices are dangerous to life, and we endeavour, not without success, to abolish or limit their effects. If we have not as yet gone much beyond this, it is, at any rate, not for want of inquiry, and the extension of sanitary researches now contemplated will lead us, we may hope, in good time to corresponding progress in the way of discovery."—*Mail, May 10th* (*Leader*), 1870.

The opinions expressed above concerning the value of medical aid and theories are shared by some medical men, if not in so general a sense, at least in a more restricted one, and in respect to some diseases. I propose to point out some of the causes of the popular distrust, and so far as limited to these causes, to enquire how far the distrust is justified. An exhaustive enquiry is quite beyond my powers, being from ignorance incompetent to assign to many facts which might be adduced their just weight. I cannot pretend to more than introduce the subject; a fuller and more technical treatment is left to any more competent writer who, attracted by its importance, may bring to bear upon it the technical knowledge of a professor.

One reason of popular distrust is the frequent disagreements among medical men themselves when called upon for decided opinions on matters of the greatest importance, as in jurisprudence. In such cases, not only does the opposition of opinion exist, but it is expressed under circumstances of the greatest publicity, and being so widely published, renders it the more powerful excitant of popular distrust. That medical men should differ as artists is not to be wondered at, the successful diagnosis of disease depending so much on the acquired skill and natural peculiarities of the observer. Many diseases having very similar symptoms, some diseases actually simulating each other, while others are not perfectly known, absolute unanimity of opinion cannot be expected. The experience of practitioners being independent, their experience necessarily very limited compared with what circumstances may demand, difference of opinion may be expected as to the suitability under certain circumstances of particular remedial agents. This legitimate difference of opinion would certainly tend to produce popular distrust, the populace not generally making due allowance for imperfections of available knowledge and skill; but such disagreements as occur occasionally at judi-

cial trials, as in cases of poisoning for instance, must tend to cause distrust even in the minds of those whose opinions deserve respect, including professors of medicine, who, from their technical education, are best able to judge, and from their professional position have most to deplore. The Smethurst trial appears to have made a deep impression. It has been suggested that much of the unsatisfactory character of medical evidence might be removed by its prior submission to a committee of experts; in other words, there are on one or both sides more or less rash assumption, defects of observation, etc.; it is only necessary to sift the corn from the chaff, but the existence of the chaff is admitted. Thus, even the thoughtful, under such circumstances, become distrustful of medical opinion, and assume a want of logical training so necessary a part of scientific education. Cases in which opinions are influenced by interest, as has been stated with respect to opinions concerning insanity, are not considered; if they exist, they need no discussion.

Another cause of distrust is the failure of the faculty to adequately account for, and successfully treat, diseases which have occupied great attention; this is especially the case in those diseases which appear to extend to the cell elements of the whole organism or of the blood. Vaccination is certainly a great discovery, founded on accurate observation independently of theory, but it stands alone, and has hitherto only suggested a path of further enquiry, attempts to follow which have as yet yielded no results. The want of success in the direction indicated is due to a great many causes, but some of the principal appear to be the following. Biological science is dependent for its progress to a great extent on the progress of the knowledge of the forces of inorganic nature, not that the forces are not the same in both cases, but the living body is so complex in the forces brought into operation therein, that the circumstances it presents are very unfavorable to successful physical research. This dependence on the progress of other branches of knowledge must tend to retard progress towards the deductive stage; for example, the doctrines of the conservation and correlation of energy could not have been applied to physiology before their discovery, and the circumstances presented by the living organism, so far as can be seen at present, almost precluded the possibility of their early discovery and proof by the biologist. A little consideration will shew how much biology is indebted to chemistry,

mechanics, etc.; the substitution of a correct knowledge of gases for the theory of phlogiston is an instance in which Biology is as much indebted to Chemistry as in the later instance of the correlation of energy it is to Physics. An interdependence exists between all branches of knowledge, but one of the most dependent is biology, and a comparatively slow rate of progress might therefore be anticipated; for if by reason of its complexity, biology is advanced by discovery in many other departments of knowledge, this same complexity offers a proportionally large number of questions for solution, and the discovery, or frequently several discoveries, must be made, previous to the biological application. Observation has advanced to the discovery of some phenomena of cell life and death; these have been observed in the tissues of the embryo and of the perfect animal, and in the lowest forms of life, as vegetables, the amœba, etc.; and the influence of temperature on cell-life has been watched in the artificial production of monsters from eggs; but what determines the action of cells on each other is not yet understood. Knowledge in this direction has not advanced so far as to render possible any deduction of value in the treatment of disease; the available knowledge is empirical, historical, as distinguished from theoretical, philosophical; the action of cells has not been connected directly with physical forces commonly so called. The introduction of animal matter into the organism under certain circumstances causes great changes in the cell action, and the introduction of such appears the most potent means of affecting the whole organism to its cell elements; knowledge is, however, very imperfect, and the subject is in that stage in which the collection of facts should be carried on vigorously, and attempts to advance hypotheses made only with the greatest caution, if at all, observation and experiment not having furnished the basis necessary to render legitimate hypotheses possible. What determines whether a cell placed in an organized medium shall multiply or perish? and what determines the contest between a few cells and myriads of dissimilar cells? the few in some cases appearing to destroy or modify the greater number. Carefully confining the enquiry to the determining circumstances, and admitting the effect due to specific qualities of the cells, the enquiry is perfectly legitimate, what are these qualities and their laws? In other words, to use analogy, a kind of cell chemistry is required, defining

the various powers and affinities of the several kinds of cells, and enquiry in this direction would, if a more humble(?) employment, be a far less humiliating one than the advancing of elaborate illegitimate hypotheses, or of explanations which are not explanations at all. An analogy between contagion and ferments has been generally recognized, but it has not led to the demonstration of any law, and it may mislead. Even, when by assuming an analogy, phenomena are accurately predicted, the closeness of the analogy is only proved to a certain point, and the forces in operation are not necessarily identical. The particular analogy mentioned above has not led to any such successful prediction, while it is really imperfect; cells introduced into the blood are introduced into a medium already replete with cell life, the action of a ferment takes place in a medium containing organic matter, but in which the cells have been destroyed by heat. To say one disease is epidemic rather than another by reason of "a specific epidemic constitution," is to offer no explanation at all. To suppose certain actions of cells on cells when the positive knowledge of the properties, and relative actions of cells on each other, is so very imperfect, is to mistake the stage of the enquiry, to violate the first principle of the natural method, to introduce deduction supported by imagination, instead of observing facts to afford grounds for induction. I believe the disagreements amongst those who have advanced "theories" (?) of zymotic diseases, contagion, etc., and the great number of such hypotheses advanced, are due to the introduction of opinion, and its substitution for the results of observation and experiments. To so criticize may appear presumption in me, but I confidently refer to the theories of disease published, particularly those of cholera and its communication; for example, see the Comptes Rendus for the number of papers submitted for the prize of 100,000 francs; and of the large number of such referred to commission, how few are deemed worthy of publication! The address of the president of the Academy some time ago, when announcing the result of examination of the papers submitted, was very far from flattering to the authors. The report of Dr. John Murray appears to me simply a confession of weakness, of the absence of knowledge, of the crudeness and ill-digested nature of the available information; while the term "germ" may mean anything imagined or figurative; it cannot justly be applied to anything yet proved to exist corporeally.

What are the properties of cells is a question of the greatest importance in the treatment of diseases other than zymotic, and must be regarded as one of the highest biological problems. That it has not been fully answered is not discreditable by any means, and is no proof that Medicine is absolutely less progressive than other departments of knowledge. The want of certain knowledge must be greatly regretted, and an unavoidable backwardness admitted; but those who have advanced illegitimate hypotheses, and paraded the same before the public, have justified a certain want of confidence in the philosophic acumen of at least a great number of men professionally scientific.

The remarks applied above to knowledge of the histological elements apply also to knowledge of organs. The latter, generally speaking, is also empirical, and further observation is necessary before the introduction of hypotheses can be useful; in fact, the so-called medical sciences are known to be imperfect in the direction indicated, partly from the difficulty of accurately observing. One of the facts really known is that of our ignorance in many respects, for even in diseases where chemical alteration is apparently so simple that our knowledge of chemistry suggests a remedy, the application of this remedy does not always realize our expectations. Such experiments are of course most necessary; they are undoubtedly the right course to pursue, but their results, indicating a want of positive knowledge, are an addition to the proof of the injudiciousness of advancing complex hypotheses. In insisting on the collection and discussion of facts, and that hypotheses at present (generally speaking) often hinder the progress of science, I am only insisting on what is perfectly well known and acted upon by many real workers in the cause of progress; the growth of anatomy, physiology, organic chemistry, etc., are due to persevering observation and experiment. How rapid this growth is at present will be seen on comparison of different editions of the most compendious manuals, such as Carpenter's Physiology. The medical journals and publications of academies contain many eminently philosophical papers; while many statistical and other medical works would compare favorably in every respect with works on other departments of knowledge, and bear witness to a wide appreciation of the objections to hypotheses urged above. Notwithstanding this appreciation, the want of it in many is a cause of mis-

trust, and such being the case, I need not apologize for my insistance here.

Comte's opinion, that the training of medical men in an art unfitted them for the highest scientific labour, appears to have some truth in it, although it needs qualification. Medical practice is the exercise of an art founded on several branches of science, the biological sciences being sciences of observation, and to a certain extent of experiment, affording at present scarcely any grounds for complex deduction, being, except perhaps in the hands of the most skilful teachers, comparatively unsuited to develope the reasoning faculties. Most of the other technical knowledge necessary being also eminently empirical, and medicine being to so many sudents a profession only, it is not to be wondered at that the continued practice of the art may, in many cases, be pursued, while much of the scientific basis on which the art is founded may be lost from neglect. Of course much sound knowledge of facts must remain, but the man who is concerned only with practising according to the rules supplied by science, who has no intention of taking part in extending the boundaries of knowledge, may well shew an ignorance of scientific method, a want of appreciation of the great difficulties of demonstrating a law of nature, should he feel called upon at any time, emboldened by his practical skill, to take part in any important general discussion. He may produce hypotheses justifying Comte's harsh judgment, but it must be admitted that the adoption of medicine as a profession leads to a wide diffusion of biological and chemical knowledge, and although the majority may merely exercise their profession as professors of the healing *art*, the sowing of so much real knowledge must bear some good fruit; much real scientific interest must be awakened, many stirred by ambition and love of humanity, must educate themselves as scientific men, and the result is the progress of science and a splendid literature almost exclusively due to members of the medical profession. As already stated, much nonsense is written, but I question if this, most injurious to progress, is not far more than counterbalanced by the good mentioned above; the real savants are able to discriminate men of their own class from pretenders, and these are ultimately the leaders of opinion in the profession.

I have incidentally mentioned above the effect on the

progress of medical science of medicine being studied as a profession; this deserves separate consideration. Medicine being a profession, attracts to its practice men who regard it as affording a living only, and these men are popularly compared to savants pursuing other scientific studies independently of professional considerations. This comparison is not a just one: to be just, it should, on the one side as on the other, be extended only to those who have spare time and means, ambition, love for science, etc., which aid and impel scientific men generally; with such limitation, the comparison will not, I think, be to the disadvantage of the profession.

There will be found, as in other branches of science, lasting monuments of industry and perseverance, and certainly no lack of logical ability; but to a certain extent, the comparison alluded to as popularly made, is rendered unfavorable by the action of members of the profession, and the public can scarcely be blamed for want of discrimination in the matter. Medical men are sometimes apt to consider their professional prospects as requiring a shew of learning, and the publication of a book as a good introduction to practice; hence many books are written which (to borrow an expression) contain much that is new and much true, but in which the new is not true, and the true is not new. These publications, for the purpose of increasing practice, etc., are a fruitful source of useless discussion, ill-digested and illegitimate hypotheses, etc. They appear to gain their immediate object, even though the profession may generally recognize their true value and ultimately suffer in public estimation by their publication. That many such books are published, those members of the profession who have the spirit of scientific men, although not the time to devote to research and literary labour, freely admit and deeply deplore. I cannot pretend to the knowledge necessary to an extensive analysis. I have already alluded to some particulars in which such publications are at fault: as another particular, I may refer to published prescriptions. I have found prescriptions containing an unreasonably large number of ingredients. A vehicle, something to remove unpleasantness of taste and the active agents, is, I believe, the classification of the constituents of a prescription; but prescriptions containing upwards of a dozen ingredients may be met with. In the present state of our knowledge, such complicated recipes

appear pedantic, while they are sometimes chemically wrong in the choice of ingredients.

Another cause of popular distrust is the very slow increase, or, possibly, even diminution of specifics; the fact being, that some agents formerly believed to be specifics are no longer regarded as such; and a mode of treatment has been adopted which is varied according to the circumstances presented by each individual case. This appears more rational than reliance on specifics; it is founded on knowledge of the organism, both in health and disease, of the total result of this mode of treatment as compared with modes formerly employed, no statistics exist on which to base a judgment; but, from the results in particular instances, and from an examination of the means formerly employed, it may justly be inferred that the present is a decided improvement on the past.

It is now more generally recognized than formerly that interference with the course of nature may be useless, or even pernicious, and consequently such interference is more carefully avoided. Popularly this may lead to the idea that medical aid is of questionable utility in such cases, but this is a proof of progress, a proof of the existence of that diffidence from which much is to be hoped and little feared.

The conclusion that the medical sciences are stationary is certainly not just. Anatomy, physiology, and chemistry, have progressed rapidly, although, as might be expected, this progress has only partially appeared in the more successful treatment of disease: the proof of progress afforded by the text-books in the several branches of science has been already alluded to above; as particular instances may be mentioned, extensions of knowledge of cell life, and action of the elements, and action of muscle and nerve, the application of the doctrine of the correlation of forces to the explanation of much before inexplicable; for instance, the relations between food and work. Important researches have increased knowledge of the functions of the blood and the actual locus of combustion; embryology has advanced rapidly, and furnished principles of frequent application; the production of monsters from eggs has demonstrated an action of temperature on development. Several instruments of research, as the opthalmoscope, etc., have greatly increased knowledge, lent an accuracy to such research hitherto unattainable, and led to the happiest results in the treatment of

disease. The knowledge of the mechanism of speech and sight has thus been greatly increased, and diseases of, or affecting indirectly, the circulation, may be more successfully diagnosed. Organic chemistry has been vastly extended, many compounds hitherto obtained only in the living organism have been obtained artificially, and a key thus obtained to the reactions preceding their occurrence in the body; while the greater perfection of organic analysis, and the analysis of gases, has rendered possible more accurate examination of organic products, and has already led to more accurate knowledge of the constitution of secretions, notably that of the liver. In comparative physiology many facts have been discovered, having important applications, notably alternative generation; experimental physiology has received developments of the greatest importance; osmosis, so prominent a phenomenon in the animal economy, has been examined more completely; anatomical knowledge has been increased, particularly respecting morbid anatomy. In materia medica, discoveries or rather applications of importance, have been made; chloroform is an instance; while the application of physical agents has been extended and improved, as application of heat, its abstraction by ice, etc.; pressure, increase and diminution of the pressure of the surrounding air, the patient being enclosed in a suitably constructed air-tight chamber, electricity, etc. Surgery, (which from the greater ease with which its evidence is evaluated is not so open to public misconception) has progressed and is progressing rapidly; for instance, I see that an improved operation (ovariotomy) has been found very successful, and has saved many lives already; a novel mode of amputation, by means of a wire kept hot by electricity, has been proposed: it is painless, unaccompanied by hæmorrhage, and has been successfully practised; the great improvements in surgical instruments and appliances, generally, and the use of partial or total anesthæsia.

Rash assumptions and pernicious hypotheses are opposed, as they deserve, by academies, and there is abundant evidence of really useful work being well done and justly honored. In the matter of cholera, for example, the French Academy has awarded 5,000 francs in one sum, and three honorable mentions for works on this subject. One author is said not to have supported his opinions in every case by sufficient facts, but the papers are otherwise as reserved as the state of knowledge demands, and they deal with facts princi-

pally statistical; the recent collection and publication in India of cholera statistics is most encouraging; while the comparison between contagions and ferments, has been begun in earnest by the comparison of a ferment and vaccine virus in preserving their properties after submission to an extremely low temperature.

It is unreasonable to suppose that the thousands who have adopted Medicine as a profession, must all necessarily be philosophers, who can spare time and money, and have the inclination necessary to research. Some worthless opinions may be expected, but it must be admitted that in a branch of knowledge eminently depending for the demonstration of its truths on the most extended observation, and most carefully compiled and well digested statistics, having more numerous and more skilled observers of the phenomena considered than any other branch of science, there is very little unity of purpose and co-operation. If individual observers cannot make independent researches, and, as in most cases, no individual could (from the conditions presented) be successful, each could record his observations, and the results of his experiments, and this seems a duty imposed by the position accorded by society to the medical profession. In surgery and medicine, individual practitioners register the results of their practice of any new mode of treatment, but this is in general extended to few cases only, and leaves much to be desired; in medicine, from the necessities of the case, the evidence is less satisfactory. When the number of cases necessary to establish the value of a given mode of treatment is considered, the collection of evidence is seen to be a work requiring earnest and extensive co-operation. In meteorology, it is admitted laws could not be demonstrated unless numerous well directed observations were made, and their results collected and discussed; and medicine is in many respects similarly situated, but not so organised. In fact it is fair to assume that great difficulty would be experienced in establishing the superiority of some modes of treating disease pursued at present, over modes formerly in use. The progress of Medicine is not demonstrated by total results data on which to form such a general conclusion not being in existence; hence much of the doubt concerning this progress. It is inferred from comparison between the knowledge available, the means employed, and particular results, formerly and at present; the actual test of statistics is want-

ing, that is, such statistics as the medical profession could triumphantly point to as proof of its success. I would suggest a professional commission, say for each country, for the collection and discussion of the statistics of disease, and of the result of medical treatment, to afford an agency through which experiments might be directed on a scale calculated to afford conclusive evidence, and through which any medical man might, by a very slight sacrifice of his time, render valuable service to humanity. The English Government has decided to collect statistics of disease through its Registrars, but this relates only to diseases terminating fatally, and is a very small instalment of what is required. Suppose such an agency as that proposed above to exist for the collection and discussion of statistics, and the direction of enquiry, seats on the committee being a reward for professional ability of the kind required, and the profession generally to co-operate with the committee in its labours, what might be anticipated as some of the results ? In a short time, definite knowledge would be obtained of the diseases prevalent at each season, in every locality, the distribution of diseases according to age, class in society, nationality and race, physical features of the globe, modes of life, trade or profession, etc.; epidemics would be traced, and an organization would be always ready to stay them ; the effect of sanatory reform in respect to diseases and cases which do not terminate fatally, would be demonstrated; the most successful of practised modes of treating particular diseases might be arrived at with certainty, the characteristics of diseases known, and accidental appearances separated therefrom with certainty ; any special immunity from disease enjoyed by a particular class would be brought to light (vaccination, and the alleged immunity of workers in copper from attacks of cholera, are illustrative examples) ; cases in which post mortem examinations had shewn diagnosis at fault, would be rendered available for the correction of generally admitted rules on that subject; any new agent or mode of treatment submitted by its author might, if deemed worthy, be tried on an extensive scale, and convincing proof obtained of its true value ; in surgery the smallest differences in favor of particular modes of operating would be detected with certainty ; much of the knowledge obtained might be represented graphically, and while laws of great importance would undoubtedly be demonstrated direct, a mass of information would be collected and rendered available for the

use of individual inquirers; the publication of much that is of little or no value would be avoided, while the publication of instances, by themselves useless, would be rendered of the greatest service by their combination with that of other similar or allied cases; individual opinion, prejudice, and inaptitude, with other disturbing elements, would be as effectually as possible eliminated; and a most wholesome influence would be exercised towards instituting, where necessary, stricter habits of thought. Many practical difficulties would have to be considered in organizing such a scheme as that proposed, but I can see no objection which might not be got over; for such objects, I believe the British Government would give every possible support, the public would have every reason to respect such an institution, and it would be at the same time the depository of the highest honour the profession could confer; and its existence a great honour to the profession in general. Such an institution, considered in the agency it would command and the object proposed, would favorably compare with any philanthropic organization in the world.

ART. XXIX.—*Cases of Snake-bite continued.* By JOHN SHORTT, M. D., &c., Surgeon, Superintendent General of Vaccination, Madras Presidency.

To the kindness of Dr. Applin, Officiating Surgeon 23rd Brigade Royal Artillery, I am indebted for the following case.

CASE 1.—"Kamptee, August 5th, 1870. Coopoo Moot, Butler, 21 years of age. Was employed in the cook-house on the 3rd July, when, in moving some small boxes, was suddenly bitten by a snake that was coiled up underneath them. He was excessively alarmed, and as I rode into the gate of my compound some two or three minutes after the occurrence, rushed up and said that he must die, and told me what had occurred. Being some quarter of a mile from the hospital, I at once adopted the most efficacious remedies at my immediate disposal, viz.:

"A strong piece of thick twine for a ligature, immediately below the seat of injury, and the free application of actual

cautery. I omitted to state the seat of injury; it was the top of the middle finger of left hand.

"The examination I made prior to the treatment I adopted, showed two small punctured wounds on the top of the finger, from which there was no bleeding, but showed two distinct punctures of a rosy red hue. No swelling had taken place, but excessive pain referred up the arm to axilla; this pain appeared of so violent a character, that the boy ran about with his left hand in his right arm pit, in great agony. After the application of the actual cautery, which I applied myself, I found a good deal of depression, which I combatted with small doses of liquor ammoniæ and brandy combined; this produced, or at all events vomiting ensued, but the remedy was repeated, the boy taking about two wine-glasses of brandy, and half a drachm of ammonia. After half an hour or so, fell into a comfortable sleep, and awoke in great pain, which evidently was the result of the cauterization. For some three weeks has suffered severely from the injury to his finger from the remedy applied, but no constitutional symptoms of any kind. Early next morning men came to catch or kill the offender, and he was found to be a Cobra of the black species, of about 3 feet in length. The boy is now in good health."

To the Inspector General Indian Medical Department, I am indebted for the following cases of snake-bite from Dr. Barter, Civil Assistant Surgeon, Seonee.

Case 2.—Mahroo, Gond servant, male, Æt. 25, was bitten by a cobra-snake, *N. Tripudians*, (*Nag*) on his left calf whilst grazing bullocks in the jungle at 4 P. M. on the 30th July 1870, in the Dengergam District, S. H., in the village of Lucknadown. Insensible. No treatment; died in two hours.

Case 3.—Mugrah, Gond servant, male, Æt. 30, was bitten by a water snake on his right calf in the jungle when drinking water in a nullah on the 14th August 1870, at 3 A. M., in the village of Makedown, S. H., in the district of Lucknadown. Recovered in the course of two hours.

Case 4.—Must Pugnee, Gondanee labourer, female, Æt. 50, bitten by a cobra snake, *N. Tripudians.* (*Nag*) on the right leg, whilst cutting wood in the jungle on the 3rd August 1870, at 6 A. M., at Seonee, in the district of Sillore, S. H. Insensible. No treatment; died in one hour.

Case 5.—Pagoo, Gowrah, labourer, boy, Æt. 12, bitten by a black cobra snake, *N. Tripudians*, (*Nag*) on his right heel, whilst cutting grass in the hedge of his compound at Peepurreeah, S. H., Seonee, on the 15th August 1870, at 9 A. M. Insensible. No treatment; died in one hour.

Case 6.—Cittee, Rugbar cultivator, male, Æt. 80, bitten by a cobra snake *N. Tripudians*, (*Nag*) on his right foot when plucking greens in the field at Keolaree, Dokerangee, S. H. on the 9th August 1870, at 1 P. M. Death in one hour.

Art. XXX.—*On some Popular Errors regarding Indian Snakes.* By Edward Nicholson, Assistant Surgeon, R. A.

I frequently meet with most extraordinary ideas about snakes, entertained often by people of no mean intelligence or education, but whose prejudices, taught them by tradition, travellers' tales or popular works on natural history, have never been disturbed by the exercise of proper observation and reflection. I purpose to cite a few of those which are familiar in some form or other to most Indian residents, and to explain or correct them.

First popular error.—*That all snakes are more or less venomous; they are slimy and disgusting reptiles, which it is man's duty to destroy.*

The possession of a poisonous salivary secretion is confined to a few kinds of snakes, and most of these are very rare. Out of the twenty-one families into which Indian snakes are at present divided, there are four families of venomous snakes. These twenty-one families include about 90 genera, of which 20 are venomous, but only 13 of these are land snakes. The species now number about 400, of which about 80 are venomous, but as 43 of these are sea snakes, we may reduce the proportion to 37 venomous land snakes, out of a total of about 360 species. (Note that by far the greater number of these are either very rare or confined to some particular part of the East Indies.) Of course when we come to an individual census of the snake population, the difficulty is very great in estimating the proportion of

venomous snakes, but I think that the above proportion, about 10 per cent., is a fair criterion, and in practice I find that that is about the proportion of venomous snakes to the total number brought to me. Of this ten per cent. we may consider that only one half are snakes fatal to human life, and this half, or five per cent., may be said to consist of two snakes only, the cobra and the chain viper, in the proportion of about one of the latter to about four or five of the latter.

The charges of sliminess and repulsiveness are pure prejudice, the former being quite the opposite of the truth, and the latter a matter of prepossessed idea. Most snakes have their skin covered with smooth polished scales repellent of dirt and moisture; there is nothing unpleasant about their feel or smell, and a little strength of mind will enable any one to appreciate their general beauty and their elegance of form.

I consider that unless we know for certain that a snake is venomous and dangerous to life, we have no more moral right to kill it than to kill a frog or any other harmless reptile. There is some excuse for him who, through ignorance, kills a snake which he fancies is venomous, but the man who wantonly kills a snake which he knows to be harmless, commits as great cruelty as the idle youth who worries cats or buys hares to be torn to pieces by his dogs.* Severer reprobation is required for the not unusually canting excuse that this cruelty is sanctioned in the Bible; I have generally found that the quoter of Scripture as a justification for the wanton destruction of snakes was quite destitute of Christian grace or moral excellence.

SECOND POPULAR ERROR.—*That snakes have a forked sting which they dart at their victim; or that the venomous kind have fangs of great length which are erected when required for use.*

All snakes have a long bifid tongue, which, usually retracted in a sheath below the windpipe, is capable of rapid and vibrating protrusion through a chink in the rostral shield; it is moved by means of two long elastic bones extending along the greater part of its length in the form of a

* There are regular purveyors of hares for this purpose at some Indian stations.

long V with the tongue rising perpendicularly from the angle of the V; muscles convert these bones into levers which jerk the tongue up and down with great celerity and freedom of play. This tongue is not peculiar to snakes; the large water lizards (*Varanus*) for instance have this bifid organ still more developed. The tongue is probably used in early life for catching insects before the regular prey of the snake can be attacked; I need hardly say that it is perfectly harmless and is never used for licking.

Harmless snakes have a row of about six to sixteen teeth in each upper jaw, besides generally two rows of palate teeth. In the venomous kinds the maxillary teeth are generally replaced by a single tubular tooth of variable length, but hardly exceeding a quarter of an inch in an adult cobra, and half an inch in an adult chain-viper (Daboia elegans). This length is from the origin of the fang to the tip, but not more than half the length can be seen by pulling up the fold of gum which envelopes the fang, and in the neutral state little or nothing can be seen of the fang, as it is entirely concealed, saving perhaps two or three-hundreths of an inch of the point, in the gingival envelope. The stories of the cobra standing with its mouth wide open and an inch or more of fangs seen quivering before its spring, &c. &c. are pure fancies of a mind prepossessed by fables.

The often mentioned erection of the fang takes place to a very slight extent in the cobra, which is unprovided with any special erective apparatus; the fang is always recurved backwards at an angle of about forty-five degrees and received into a depression in the lower lip. In some of the vipers there is a special erective muscle, but in every case the uncovering of the fang is a passive act as regards the snake, being effected by the gingival envelope being pushed up mechanically by the object bitten.

Third popular error.—*That the poison is contained in a bag at the base of the fang, and is sent through the fang by the pressure of the object bitten.*

The fang is at the anterior extremity of the upper jaw-bone, while the poison gland is situated on the cheek behind the eye; the poison on being ejected either by direct muscular action or by a reflex nervous action similar to that excited in the human mouth by the idea of eating

lemon, proceeds along a duct which passes below the eye, over the jaw-bone, and terminates at the bottom of the gingival envelope of the fang, and just in front of the superior orifice of its canal. There is no continuity between the orifice of the poison duct and that of the poison fang. They are merely in apposition, and the poisonous salivary secretion is directed into the fang by the retraction of the gingival envelope round the fang in the act of biting.

FOURTH POPULAR ERROR.—*That there are reserve fangs ready to replace those in use should they be broken off.*

This idea has long been entertained by naturalists, but a little reflexion will show how very anomalous it would be for reserve teeth to remain in a state of arrested development waiting for a contingency which might never happen. The real fact is, that there is no special legislation of nature for the poison fangs apart from the other teeth. Every tooth in the snake's mouth, whether simple tooth or poison fang, is enveloped more or less in a gingival envelope which contains at its base the matrix of a series of other teeth; these young teeth are constantly growing, and the eldest of them periodically replaces the fixed tooth and becomes fixed until it is shed in its turn. This shedding is a gradual process compared to the shedding of the epidermis, but the two operations coincide in time and take place about once in two months.

FIFTH POPULAR ERROR.—*That a venomous snake may be known by a peculiar formation of the head, &c.*

I have been so frequently asked about this that I regret that I did not speak specially on this point in my little book on Indian snakes. There is a general idea that there must be some external and plainly visible sign enabling one at a moderate distance to tell whether a snake previously unknown is venomous or harmless. There is none. A close inspection will alone tell whether the snake has poison fangs or not. A venomous snake has the upper maxillary row of teeth replaced by a single fang (sometimes followed by one or two short ordinary teeth rather difficult of detection.) An inexperienced person is nevertheless liable to mistake the harmless long tooth that many snakes have in the front of the upper jaw, for a poison fang, or else to

overlook a short fang enveloped in its gingival fold. As to the external character of the head there is no single rule, but the following may be useful:—

First rule.—A shielded head (that is, with the crown occupied, not by scales as on the rest of the body, but by about seven large plates) is generally the sign of a harmless snake.

Common exceptions.—1st, the Cobra, too well known to require description. 2nd, the Bungarus. In India the usual snake of this genus is *Bungarus arcuatus*, the white-arched bungarus; it has a white belly from which pairs of white arches cross the black back. In Burma this is replaced by *Bungarus fasciatus*, the yellow and black-banded bungarus; it has alternate complete rings of black and yellow. (The Hamadryad, *Ophiophagus elaps*, a member of this family, the Elapidæ, is extremely rare; it resembles a huge cobra.) This family is also distinguished from the rest of the shield-headed (harmless colubrine) snakes by the absence of the loreal shield, a small shield usually separating the antocular shield from the posterior nasal, so that there are but two shields instead of three between the eye and the nostril.

The sea-snakes which have shielded heads are also an exceptional family, being all or nearly all venomous. They are known from other aquatic snakes by their perpendicularly flattened tail.

Second rule.—A scaly head (that is, the crown covered with scales as on the rest of the body) is generally the sign of a poisonous snake.

The scaly-headed snakes are usually vipers; the *Viperidæ* have usually a high flat head, very distinct at the neck and broad behind the jaws. They have long, more or less erectile fangs, with an erect pupil. The only one fatal to human life is the chain-viper, *Daboia elegans*, known by a triple chain of oval black links, and an indistinct yellow ⊳ on its head. The green tree viper, *Trimesurus*, is a short stout snake, very different in build from the long slender green tree snake; it is venomous in a very slight degree.

Common exceptions.—The Erycidæ and Acrochordidæ have also scaly heads; a common sand snake, *Eryx Johnii*,

might possibly be mistaken for a viper, but its small head is very different from that of the vipers.

It is thus seen that the most common venomous snakes are shield-headed like the harmless snakes, and that the absence of the loreal shield is the only external sign of a venomous snake; it is simpler to open the snake's mouth and see if there are poison fangs, than to rely on rules subject to exceptions.

SIXTH POPULAR ERROR.—*That there exist antidotes for snake poison generally.*

This is an unsettled question, but judging from the experiments made in Melbourne and Calcutta, it would appear that the poisons of venomous snakes act differently on the animal system. I also know that the poison of the green tree-viper causes great swelling with some pain, but very little constitutional disturbance, while the cobra's poison causes little or no pain and swelling, but fatal constitutional disturbance. Moreover, a snake-catcher whom I employed in Burma had great dread of the bite of the chain-viper, whilst he did not in any way fear that of the cobra and the hamadryad. I have seen him bitten by perfect specimens of both these latter with complete impunity, but whilst thinking nothing of getting a bite from a large and savage hamadryad, he had suffered so severely from a bite of a chain-viper that he was very chary of handling this snake without precaution. When bitten by a cobra or hamadryad, he would suck the wound and apply to it some medicine which he chewed (it is a dry vegetable pulp, which I fancy gives me a headache when I chew it), but I have good reason to believe that tattooing himself with gradually increasing doses of cobra poison was the real antidote he employed. I believe that the Burmese snake-catchers periodically inoculate themselves by this tattooing; perhaps mixing with the poison some remedies likely to mitigate its effects. The old hands are less affected by accidental bites than their younger brethren, evidently, on this theory, from their comparatively more complete inoculation.

SEVENTH POPULAR ERROR.—*That the male and female cobra are very different in appearance.*

There is no external difference in the appearance of the two sexes, except on close examination of the sexual organs.

The origin of this error appears to be as follows. The *Ptyas (mucosus* or *korros), dhāman* in Hindustani, *sarai* or *sara pamboo* in Tamil, *chéra pamboo* in Malayalum, *lémwé* in Burmese, is generally supposed by natives of the South of India and of Burma, to copulate with the cobra, producing a very venomous hybrid offspring, of doubtful identity; hence it is frequently called the male cobra. The Ptyas is a bold but perfectly harmless snake, quite distinct from the cobra, and if it does supersede male cobras in their conjugal rights (which it may do for all I know to the contrary) there does not appear to be any known hybrid. The story is improbable, originating doubtless in a black cobra found along with one of fairer complexion being mistaken, as it might be at a distance, for a dark coloured dhāman; the latter snake is often indeed of so dark a colour as to be not unlike a dark cobra.

Observations on the defective English nomenclature of Indian snakes.

The irregular and often meaningless names given to Indian snakes by Englishmen all but unacquainted with this order of reptiles in their own country, causes great confusion. It is too often a point of honour to tell either from a momentary glimpse of a live snake or from a somewhat more prolonged inspection of it after it has been well smashed, its exact place, name and quality, and few Englishmen will resist the temptation to allot to it one of the half dozen meaningless names which include some three hundred distinct species of snakes. A score of different snakes may commonly be found about houses, but they all, if small, come under the head of 'carpet snake;' any snake found out of doors is, if small, a grass snake or a carpet snake according to imagination, if large, a whip snake or a rock snake. *Ptyas*, the dhāman, is indifferently known as the whip snake, the rat snake, the rock snake, in Madras; whilst in Bengal the name 'rock snake' is usually given to the python. Any snake found near or in the water is usually called a 'water snake,' from ignorance of the fact that nearly all snakes can swim and will readily take to the water if necessary. Indeed, I captured a snake who rejoices in the highly terrestial name of *Psammodynastes pulverulentus*, the dusty king of the desert, whilst it was swimming across the Rangoon lake. This exceptional conduct does not

invalidate, the use of well defined Latin names. Even the name 'cobra,' 'cobra capella,' 'cobra de capella,' etc., though attached to an unmistakable snake, is a misnomer and given at full length, has led to considerable error. My acquaintance with Portuguese is of the most limited character, but it appears evident that it means the hooded or capped snake, 'cobra' being derived from 'coluber.' Now if any word could be more inappropriate and deceptive than another, it is the term 'hood' as applied to the broad expansion produced by the elevation of the cervical ribs of *Naga tripudians* and *Ophiophagus elaps.* The native terms used to describe it, *putum* in Tamil and Malayalum, meaning a cloth, a picture, a map, and *phun* in Hindustani, both give an idea of breadth and expansion entirely wanting in the terms 'capella' and 'hood'; the word 'hood' also misleads people in England into fancying that the snake blows its neck out like a bladder and covers its head to some extent with the inflated skin.

The chain viper is sometimes known as *cobra monila*, a name which in Portuguese (I again crave indulgence for mistakes) appears to mean the bead-snake, but at present leads many people to an erroneous idea of relationship with the cobra *Naga.*

It appears to be hopeless to expect any change in the nomenclature of Indian snakes. Snake-stories are now the last refuge of the traveller, and people are so ready to accept the marvellous if told about a snake, that we cannot expect any change likely to interfere with the vested interests of the snake-story teller. Pictures, statuary, jewellery, stories, all join in the universal craving for the marvellous and hideous in all that concerns this persecuted order of reptiles. For my own part I have been interested in snakes for the last seven years, I have sought them in every way, I have kept them in my house, and—I have not a single snake-story to tell; I am obliged to depend on my friends for them.

Art. XXXI.—*Case of Craniotomy; illustrating uterine force.* By W. Farquhar, M. D., Assistant Garrison Surgeon and in medical charge Bowring Civil Hospital &c., Bangalore.

Mareemoothoo, aged 39 years, a primipara, admitted on 23rd July 1868, said to have been in labour three days; breech presenting and a fetid, purulent discharge issuing from vagina; incised wounds about the vulva. There was great difficulty in delivering the breech, each lower extremity requiring the aid of the blunt hook to bring it down, there being diminution of the antero-posterior diameter of the pelvis. The head being firmly fixed at the brim, and utterly immoveable to forcible traction, the perforator was applied to the occcipital bone at the pubes. The cranial contents were removed with difficulty, the skull being as hard and unyielding as the shell of a cocoa-nut. Ergot had previously been given, and while friction was now applied over the uterus, the head started out with a loud noise, though no extracting efforts were then being made. The head was found to be large and the sutures quite ossified. On both sides of the head there was a semi-circular fracture, allowing the parietal eminences to collapse, thus reducing the head to a size admitting of sudden expulsion.

The patient was discharged on 31st July.

The above may be looked upon as a sort of cephalotripsy performed by nature, and argues a greater amount of force than the natural powers usually get credit for, though by no means surprising after the results arrived at, by Professor Haughton, in a mathematical calculation* of the forces employed in parturition. That distinguished *savant* found that the aggregate forces represented a total of 577·75 lbs., 54·10 lbs. being assigned to the uterus and involuntary muscles, 523·65 lbs. to the voluntary muscles. The learned Professor concludes in these words, "thus we see that, on an emergency somewhat more than a quarter of a ton pressure can be brought to bear upon a refractory child that refuses to come into" the world in the usual manner.

From the great preponderance of the voluntary forces, the Professor throws doubt upon the propriety of using

* See Dublin Quarterly Journal, No. 98.

chloroform. This would be correct were it necessary, for easing pain, that the stage of paralysis of the voluntary muscles should be reached.

The knowledge that such forces are available, if they can only be coaxed into efficient and co-operative action, may now and then supply the practitioner with a useful hint.

The ordinary causes of delay in the second stage of labour need not here be named. But there is one hitch—irregularity of contraction of the uterine fibres—that, probably oftener than is thought, renders uterine action entirely abortive for the purpose of delivery, thus giving rise to weary waiting to all concerned.

Three months ago, a lady in rude health, and who had always easy labours, was taken ill in the night, and labour went on steadily till 7 A. M. when the pains ceased. At this time I was called, and found the os uteri soft and dilated to the size of a crown-piece, but very high; the head was presenting. I ordered a binder to be applied, and an enema to be given, and directed the patient to move about, short of fatiguing herself. The pains were very irregular all day, and though apparantly severe, they were "doing no good," and the patient began to get dispirited. At 7 P. M. scarcely any progress had been made on the state at my first visit. I determined that the patient should have a night's rest, and gave 25 drops of laudanum, leaving 15 more to be given, if necessary, an hour after. In half an hour, while preparing to leave, I was summoned to find the pains set in with vigour. In 20 minutes more, the child was delivered, the whole effect appearing as if a large dose of ergot had been given instead of a moderate dose of opium.

CHOLERA IN 1870.

IT has been hinted to us that occasional accounts of the distribution of cholera may be useful to many of our readers, whose fields of observation are limited to a comparatively small geographical area; and we propose therefore, from time to time, to record very briefly the spread of cholera in the Southern Districts of India, so that the investigators of the phenomena of epidemic distribution may know in what direction to seek for knowledge.

Before we allude to the cholera of the present year it may be as well, for the sake of clearness, that we take a retrospective glance, and observe the course taken by the epidemic in the preceding year. The years 1867 and1868 witnessed the almost complete extinction of epidemic cholera in the Madras Presidency. The year of famine (1866) which preceded this period, was one of very general cholera prevalence, and about 200,000 persons fell victims to it. In 1867 the deaths went down to about 20,000, and in 1868 to 8,000. In the twenty revenue districts of which this Presidency is composed, seventeen may be said to have been practically free of cholera in the year 1868. But although the scourge was almost completely in abeyance in the tract of country south of the Godavery river, it was making great havoc in the Central Provinces during 1868, and in November of that year, it had advanced so far south as the native city of Hyderabad, from whence it has been clearly traced into the Kurnool district, along the southern road towards Cuddapah, *via* Nundial. It is noteworthy, in regard to Bryden's theories of monsoon influences, that cholera took more than 40 days to travel over about 200 miles of ground, between Hyderabad and Nundial, and that too, notwithstanding the existence of north-east monsoon winds to help it along. In the

Kurnool district the disease appeared in January 1869, and destroyed more than three per 1000 of the population. It spread from thence to Bellary on the south-west, to Cuddapah, North Arcot, and Madras to the south. But by the time it had got so far, the epidemic was in a measure arrested in its progress, probably by the setting in of the hot weather. It may be noted here, that the rains of the north-east monsoon of 1868, which usually fall in October and November, were everywhere deficient, and in many places failed completely, and that the subsequent hot season of 1869 was remarkable for its unusually high temperature. This high temperature and coincident drought, undoubtedly arrested, temporarily, the progress of the epidemic wave from the north. As the early rains of the south-west monsoon fell in June, cholera revived over a good part of Hyderabad, Kurnool, Bellary, and North Arcot, and then extended slowly to the southward.

At the close of 1869, cholera was increasing rapidly over the alluvial districts of Tanjore and Trichinopoly. It was still vigorous in North Arcot and Nellore, and a portion of the Madras district. By the end of the year, the monsoon had again changed to the north-east, but cholera travelled no faster with the wind in its favor than it did with the south-west wind against it.

In the beginning of the present year, then, we found cholera prevailing chiefly in two districts, Tanjore and Trichinopoly. To those who think that a connection may be traced between rainfall and the general diffusion of cholera, it is worthy of note that a cyclone passed over the extreme south of India in November 1869, and that the rainfall in Tinnevelly, part of Travancore and Madura, was so excessive, as to inundate vast tracts of country. The rainfall of the north-east monsoon in Tanjore and Trichinopoly was also much above the average. From Trichino-

poly and Tanjore, cholera proceeded southward, invading first the Madura district and independent state of Poodacottah, and next Tinnevelly. Scattered cases had occurred in Tinnevelly in January and February, but the outbreak did not begin until March. From that date, all through the hot and dry weather and south-west monsoon, the Tinnevelly district, especially over the inundated tracts, has been very severely swept by cholera. From the extreme south of the Tinnevelly district cholera turned round by Cape Comorin and invaded the Travancore province. The mountain barrier between Tinnevelly and Travancore appears to have kept the latter district free, for at least two months after Tinnevelly itself was under the choleraic influence.

But the limits of India at the extreme south did not arrest cholera. It passed over with the stream of coolies to Ceylon, and has apparently spread to many places in that island, though the latest official reports speak of it as everywhere extinct, except on the northern road near the gulf of Manaar. The Madura district has lost fewer of its population than Tinnevelly, but from March, when the disease broke out at the Pulney festival, until the present time, the district has never been free. We are informed, moreover, that some of the residents on the Pulney Hills took the disease back with them after the festival at the foot of the hills, and that the hill villages, all through the south-west monsoon, suffered very severely. The recent development of cholera in the town of Madura was thought to be due to a re-importation of the disease from Ceylon. Certain emigrants landed at Daviputum in August, and people coming from this place were the first to suffer in Madura town.

Such is a brief account of the progress of cholera in the extreme south. The more northern of the districts of the Presidency were in a very satisfactory state of health at the beginning of 1870. Bellary, Kur-

nool, Cuddapah, Vizagapatam, Godavery and Kistnah, were perfectly free. Cholera lingered on from 1869 in the Zemindary tracts of North Arcot, and in that *terra incognita* (so far as sanitarians are concerned) Tripaty; it prevailed also slightly in Nellore. In the latter district it had died out in March. But in Tripatty in North Arcot, a great congregation of pilgrims assembled in the beginning of May, and suddenly we hear of epidemic cholera, not only in the town of Tripatty, but along various routes taken by pilgrims. The great feast of Conjeeveram (Madras district) began on the 11th May, and many of the Tripatty pilgrims went thither direct by rail. As might have been anticipated, cholera broke out at Conjeeveram at the same time, and the people in dispersing, scattered it all over the southern portion of the North Arcot district, to South Arcot, Madras, and the eastern portions of the Salem district. From North Arcot, and possibly by means of the Tripatty pilgrims, cholera spread over the Mysore plateau, though not to any great extent; and in July, the military station of Bangalore began to suffer, though happily the loss of life to the European soldiery has been small.

In the northern revenue districts of Kistnah and Godavery, cholera had no footing whatever in 1869, and up to the end of March 1870, the cholera returns were absolutely blank. About the end of March cholera was clearly imported into the Godavery district. The evidence of importation will, in due time, appear, but we may remark of it that the case is most fully made out, and the further fact that from this imported cholera sprang up a terribly fatal epidemic, limited chiefly to the Godavery and neighbouring districts, which continued until the end of September.

As regards cholera at the time we write, it may be said to be dead "or dormant" in almost every district but Madura and Coimbatore. Whether it will spring into existence again in the southern districts after

the north-east monsoon, it is impossible to say, though what Bryden calls a re-vitalization may be looked for. The rains of the south-west monsoon have everywhere, except on the western coast, been unusually heavy, and the north-east monsoon has set in with heavy rain.

It is right that we should allude to a confirmation of Bryden's theory as to the exemption of "invaded" districts in years following upon outbreaks. Now in 1869, Hyderabad, Bellary, Kurnool, and Cuddapah were "invaded" from the north, and in 1870, these districts show nothing but blank spots in the cholera map of the year. The "invaded" districts this year have been Madura and Tinnevelly, which in 1869 showed clean bills of health. In this case, the invasion was a steady progress from north to south, and so was the subsequent invasion of Ceylon; but in Travancore cholera took a bend round the ghauts to the west, and then travelled up the littoral districts in a northerly direction. Then again, the Godavery and Kistnah districts, which were quite empty and ready to be occupied, were invaded from the south in the end of March.

And as regards new theories as to the influence of moisture, the epidemic of the present year in North Arcot burst into life in the midst of the hot, scorching land winds which sweep over the Carnatic. Its progress at Tripatty and Conjeeveram was not stayed, notwithstanding the almost intolerable heat and dryness of the weather at that time. At Conjeeveram, and all over the district, water was very scarce and bad. Half of the tanks were dry. In the town of Madras, cholera began to increase with the hot land winds which set in about the end of April. In the Godavery district the disease became very virulent during the hot months of April and May. Heavy rain in June appeared to have a favorable influence in checking it in a few places, though in not others.

The accurate record of deaths from cholera, over a wide extent of territory, such as this Presidency contains, promises in course of time to be very useful as data for the illustration of the natural laws of the growth and decline of an epidemic. All that can be safely deduced at present, is that districts which have been free of cholera for some months or years, are particularly liable to invasion, while districts which have just suffered invasion, are practically exempted for a longer or shorter period afterwards. But as the same phenomena are common to both small-pox and fever epidemics, it cannot be said that much advance of knowledge has yet resulted from the record of deaths. A longer experience and careful watching of the progress of epidemics, from day to day, are necessary before any practical deductions of value can be made.

Cholera is a disease *brought in* to various local centres from time to time, whether by the agency of monsoon winds or human intercourse, or by other means, we shall not at present discuss. For almost every village or district there are intervals of rest; in some long, in others short, but intervals which give to every town and district opportunities of setting their houses in order to await the epidemic onslaught.

And while we write, it is no little triumph to us as sanitarians to add, that although cholera has prevailed very extensively this year in Madras territory, it has left our jails and military bodies almost unscathed. The newly-built central jails have remained untouched. The British Army returns will show a lamentable loss of life from cholera at Thyet-Myo in Burmah; but with this exception, and a few deaths at Madras and Bangalore, the returns for 1870 will, we trust, show a very gratifying exemption from cholera, the result we would fain hope of intelligent sanitary care on the part of the officers of the Government.

BONDUC NUTS.

In December of last year, Mr. H. L. Houghton wrote to the Governor General's Private Secretary, to bring this seed to his notice as a remedy for epidemic fever. He stated that the plant from which the medicine was obtained grows most abundantly in Bengal, Assam, and other parts of India, and suggested that a publication of its virtues would prove most beneficial to the people amongst whom it abounded, and who might be beyond the reach of European remedies. The drug is recognized by Dr. O'Shaughnessy, and was employed successfully in the treatment of fever in a European regiment, on an occasion when other medicine was not obtainable. It is readily found in the bazars, being freely administered for fever by the native practitioners, but not (Mr. Houghton supposed) generally known by the people themselves. The plant is called *Lata* by Bengalis, and *Katkaranj* by Hindustanis. Finally, the dose is one seed.

The Government of India remarked that the medicine in question was well known ; referring to the following passages in Waring's Pharmacopœia of India.

CÆSALPINIA (GUILANDINA) BONDUCELLA.

Linn. Bonduc.

Habitat.—Tropical portions of both hemispheres.

Officinal Part.—The seeds *(Bonducellæ Semina, Bonduc seeds)*; of a somewhat irregular sub-spherical or ovoid form, usually five-eighths to six-eighths of an inch in diameter, smooth, hard, and lead-coloured, and contain an amylaceous white nucleus, having a bitter taste. They contain a fixed oil, resin, and a bitter (crystallizable ?) principle.

Properties.—Tonic and antiperiodic.

Therapeutic Uses.—In intermittent fevers, especially in those of the natives, they have been employed with much success. They have also been advantageously prescribed in debility and other cases requiring tonics.

Dose.—From ten to fifteen grains twice daily.

Preparations.—COMPOUND POWDER OF BONDUC. *(Pulvis Bonducellæ compositus.)* Take of Bonduc seeds, deprived of the shells and powdered, one ounce; black pepper, powdered, one ounce. Mix thoroughly and keep in a well-stoppered bottle.

Dose.—From fifteen to thirty grains, three times a day.

CÆSALPINIA BONDUCELLÆ (MEDICAL PROPERTIES AND USES OF.)

Amongst the numerous testimonies in favour of the antiperiodic and tonic properties of Bonduc nut, we may cite Dr. Royle (*Illust.*, vol. i. p. 85), Dr. Ludlow (*Calcutta Med. Phys. Trans.*, vol. iii. p. 59), Mr. J. Hutchinson (*Idid.*, vol. v. p. 42), Dr. Stewart (*Ibid.*, vol. iv. p. 437), Mr. Twining (*Diseases of Bengal*, vol. ii. p. 217), Dr. Elderton (*Outlines of the Practice of Physic*, p. 204), and Assistant Surgeon Bholanauth Doss (*Indian Ann. of Med. Sci.*, vol. iii. p. 393). In some cases in which this remedy was tried by the Editor the results were unsatisfactory, and Dr. Kirkpatrick (*Cat. of Mysore Drugs*, No. 468) found its operation uncertain. In some cases it seemed to cure intermittents as rapidly as quinine, whereas in others it had no effect. The general tenor of the reports received from India, especially from Dr. Æ. Ross, Dr. Oswald, Dr. J. Shortt, Dr. J. Newton, Dr. Bholanauth Bose, and Sub-Assistant Surgeon Odoy Chund Dutt, is in favour of the antiperiodic and tonic powers of this remedy. According to Dr. Kirkpatrick, the root in ten grain doses is superior to the seed as a tonic and antiperiodic. Most of the reports notice the use of the bruised seeds as an application in orchitis, but no one appears to have witnessed benefit from it. Further remarks on this drug will be found in a paper by the Editor (*Indian Ann. of Med. Sci.* 1858, vol. v. p. 616.)

They suggested, however, that experiments might "be made with the crystallizable principle of the seeds," and requested that Mr. Broughton should be asked by the Madras Government to prepare a small quantity for the purpose. The local Government complied, at the same time forwarding the correspondence to the Principal Inspector General Indian Medical Department, and to the Conservator of Forests, in order to ascertain whether the plant is known in the Madras Presidency, or its seed used for medicinal purposes. The latter replied that the *Gajga*, or *Cæsalpinia Bonduc (Linn.)* "is very common in many parts of our Presidency, paticularly so about the back-waters on the western coast, where the plant

is known by the native name of *Kalichi*. The nuts are used by the natives as a febrifuge and tonic. They have been analyzed, and are said to contain oil, starch, sugar, and resin." The Inspector General stated that the *Cæsalpinia bonducella* "is widely diffused in Southern India, and very common inMysore and the Deccan. The seeds are frequently used by natives for the relief of malarious fever. European practitioners have also tried both seeds and roots as a febrifuge with satisfactory results." We subjoin Mr. Broughton's report.

The shrub that produces the Bonduc nuts, (as they are called in this Presidency,) is well known, and the nuts are to be had in every bazaar. From inquiries I made in 1868, I was not led to form a high opinion of their medical efficiency as a febrifuge.

I have examined the nuts chemically; they contain no special crystalline principle Their bitterness is due to the presence of an oil which will be found to possess in a concentrated degree any therapeutic virtues possessed by the nuts. I find this oil to be readily extracted by carbonic disulphide.

I have the honour to forward a sample of this oil for medical trial. On the datum given in Mr. Houghton's letter that a single nut is a dose, a dose of this oil should consist of 3 grains. The quantity sent will furnish 300 doses.

The oil on saponification yields a peculiar fatty acid, related to oleic acid, on which doubtless depend its special properties. This acid, however, is unfitted for medical use, since it rapidly oxidizes when exposed to the air. Hence the oil alone is suitable for use as a medicine. The separation of the acid in a pure state would be a work of very great labour, and would require large quantities of oil. I shall therefore defer attempting it until the efficiency of the medicine has been proved.

Further quantities of oil can be supplied when required. I have the honour to request that I may be informed of the result of its trial.

Mr. Houghton seems to have set the ponderous machinery of two Governments in more rapid motion and with greater ease than is usually practicable. If he had referred to the Pharmacopœia of India for information on Bonduc seeds he would probably have

let the Governor General's Private Secretary alone; but we are glad that his ignorance of what was already known on the subject has been the means of eliciting one of Mr. Broughton's valuable papers.

LOSSES IN WAR.

THE following statistics of Casualties in the principal battles of the 19th century, which have been collected by M. Caffe, seem opposed to the general belief that battles are becoming more bloody as civilization advances. The relative proportion of killed to wounded may be altered so that the loss of life is greater since the means of destruction have been improved; but the ratio per cent. of killed and wounded together, to the numbers engaged, has apparently diminished. It has been said that in the present war the wounded return to duty, on the German side at least, sooner than used to be the case. This fact, if true, may be partly due to moral causes.

In 1800 at Marengo there were 28,000 French and 30,000 Austrians; total 58,000; 13,000 men were killed or wounded—22·4 per cent.

At Austerlitz 90,000 French, 80,000 Austro-Russians; total 170,000; killed or wounded 23,000—13·5 per cent.

At Jena 100,000 French, 100,000 Prussians; total 200,000; killed or wounded 34,000—17·0 per cent.

At Wagram 150,000 French, 130,000 Austrians; total 280,000; killed or wounded 24,000—8·6 per cent.

At Borodino 125,000 French, 125,000 Russians; total 250,000; killed or wounded 80,000—32·0 per cent.

At Leipzig 150,000 French, 280,000 Allies; total 430,000; killed or wounded 50,000—11·6 per cent.

At Waterloo 68,000 French, 67,000 English; total 135,000; killed or wounded 14,000—10·4 per cent.

At Solferino 135,000 French and Sardinians, 136,000 Austrians; total 271,000; killed or wounded 27,000—9·9 per cent.

At Kœnigsgraetz 200,000 Prussians, 200,000 Austrians and Saxons; total 400,000; killed or wounded 28,000—7·0 per cent.

TOBACCO IN FRANCE.

WE learn from one of the papers published by the French Association against the Abuse of Tobacco, that the sale of "the weed" in France produced in 1867, 248,732,345 francs (nearly ten millions sterling); that the number of planters was 54,334; and that 17,498 hectares were devoted to the cultivation of this "poisonous plant." Twenty years previously the produce of the sale, (which is a State monopoly,) scarcely amounted to forty millions of francs, or £1,600,000.

PROFESSOR BEDFORD.

WE regret to observe the announcement of Professor Gunning S. Bedford's death, which occurred in New York on the 5th September. Dr. Bedford belonged by birth to the southern section of the United States, but his entire medical career was run in New York. Midwifery was his specialty, and he filled for very many years the chair of this subject in the University of New York. His Lectures on Midwifery is a standard work, and in his own subject of Gynæcology he has left behind him no superior, even amongst the eminent physicians of New York. He was in his sixty-fourth year.

REVIEWS.

RECENT CONTRIBUTIONS TO THE LITERATURE OF ASIATIC CHOLERA.

1. *Epidemic Cholera in the Bengal Presidency.* By JAMES L. BRYDEN, M.D., Surgeon Bengal Army, Statistical Officer attached to the Sanitary Commissioner with the Government of India. Calcutta: Office of Supt. of Govt. Printing. 1869.

2. *A Treatise on Asiatic Cholera.* By C. MACNAMARA, Surgeon to the Calcutta Ophthalmic Hospital. London: John Churchill and Sons. 1870.

3. *Statistics of Cholera.* By EDWARD BALFOUR, L.R.C.S.L., Deputy Inspector General of Hospitals, Madras Army. 2nd Edition. Madras: Athenæum and Daily News Office. 1870.

4. *Address to the Bengal Branch of British Medical Association.* By J. MURRAY, M. D., Inspector General Indian Medical Department. Calcutta: *Indian Medical Gazette,* March 1870.

(Continued from page 142, *No. VIII.)*

THE pathology of Asiatic Cholera is dwelt upon at some length by Mr. Macnamara. He urges the importance of microscopical observance of rice-water stools, while they are in a perfectly *fresh* state; as a characteristic feature of cholera is that changes in the epithelium occur *during life*, which resemble very closely the changes which normally occur as a post-mortem effect.

"When epithelial cells from the intestine of a cholera patient are examined under the microscope ($\frac{1}{4}$ inch object glass), we shall notice that the cells contain a vast number of minute dark specks, precisely similar to those seen in a pus corpuscle. The extent to which the epithelium of the intestinal canal is occupied by this molecular

matter, varies very considerably in different specimens taken from different parts of the intestinal canal of the same subject: even in the most quickly fatal cases which I have examined, patches of almost healthy epithelium were to be found on the walls of the intestines, and in the fluid it contained. If the molecular matter be examined with a higher power (25th of an inch), we shall discover that the specks which appeared as one under a low power, are composed of smaller particles, and that these have an independent but limited motion among themselves."

Mr. Macnamara has examined these molecules for hours together, not only with the ordinary object glasses, but with the highest power yet made (1/70th of an inch), in order to bring all the resources of the microscope to bear on this point. He says, however, that the results have been chiefly negative. The molecular matter, when examined by the 1/70th power,—

"Is still nothing more than molecular matter, small specks in the epithelial cells. I conceive, however, that the higher the power used, and the more careful the search instituted, the more certain it becomes that this molecular matter is formed in, and at the expense of, the epithelial cells, blood globules, gland cells, or in fact, any organic matter brought within its influence."

"It seems to me that this molecular matter, if introduced into the intestinal canal of men, is capable of setting up, during life, in the cells lining the intestines, an action similar to that by which it was itself produced; but whether this conversion is due to chemical affinity, or is brought about by the introduction and growth of a cholera germ, or cholera "zymes" as Dr. W. Farr calls it, I am at present unable to determine. But I believe that this rapid molecular formation in the epithelial cells of the intestinal canal is peculiar to the disease we call Asiatic Cholera, and in no other malady is anything similar witnessed."

Dr. W. Farr observes in regard to the molecular substance of the epithelium,—

"Every one of these little living molecules, moving under the microscope, has the power of producing out of suitable matter, by conversion of force alone or conjunctively, molecules identical in nature and power; they have all its characters of life, they generate, they die, that is, they are turned into other forms by other forces; and as with the ova of higher species, the secret of their metamorphic power has hitherto eluded the finest analysis of chemistry, and the higher powers of the microscope."

The difficulty in regard to any further advance, so far as microscopical and chemical investigations are concerned,

may be conceived when we consider what our present state of knowledge is in regard to the action of snake-poison. In this case, we can collect the poisonous stuff in bulk, and examine it at leisure under the microscope, or submit it to chemical analysis. These methods of research, however, have thrown no light upon the causes of the virulence of the poison. To the chemist, the cobra-poison is nothing but "gum" and "resin," with an animal principle analogous to *ptyaline*. Under the microscope, nothing has been positively made out as to its nature, although Halford declares that the germinal matter consists of nuclei $\frac{1}{4000}$ inch in diameter, and that the fluid poison is either slightly acid or neutral. Halford, some time ago, thought that he had discovered a growth of foreign cells within the blood, in men and animals under the influence of snake-poison, but this observation was distinctly negatived by Fayrer and other observers; and Halford now admits that what he took to be a peculiar cell growth, is nothing but an altered condition of the white corpuscles of the blood. Thus, in regard to one of the most virulent animal-poisons in creation,—a poison that admits of being smelt, handled, and examined,—physically, chemically, and microscopically—science can as yet tell us but little in regard to the manner of its working; and so it is with regard to the peculiar principle of cholera. We can see its effects in the destructive infiltration of intestinal epithelium, and we have good grounds for believing that the molecular matter which has grown in the intestines of a cholera patient, is capable of growing again under similar conditions and circumstances, but beyond this we cannot at present go. Whether the germ be fungoid or animal in its nature, we do not know, and we must await improvements in the methods of microscopical research before much additional advance in precise knowledge can be gained.

As regards the general pathology of cholera, it may be noted that it is not only the intestinal epithelium which is destroyed. The nasal passages, mouth, pharynx, œsophagus, stomach, kidneys, lungs, have their epithelial surfaces somewhat similarly affected—the rice-water stools of cholera have always an alkaline reaction. They consist of a fluid portion and a thicker, which is flaky or stringy, and falls to the bottom of the vessel. Mr. Macnamara, who is always practical in his writings, makes a useful note, which may be of interest from a diagnostic point of view. He says that from the rapidity

and completeness of the separation of the two parts of a cholera stool, some indication of the gravity of the case may be formed. If the flaky particles settle rapidly, it is a sign of complete death and disintegration of the molecular loaded epithelium cells, while if the separation proceeds more slowly, "it is on account of the evacuation containing a "considerable quantity of comparatively healthy mucus, and "the case so far allows of a more favourable prognosis."

"Vibriones" are not found, according to Macnamara, in fresh dejecta but towards the end of collapse; when evacuations are passed less frequently, they may be frequently seen. Any thing in the shape of fungoid growths, he affirms, cannot be discovered in perfectly fresh cholera stools.

This subject, however, may be safely left to be dealt with by the gentlemen who are now officially investigating that particular question.

Space forbids us to linger longer in discussing the special pathology of cholera, though all who desire to ascertain the more recent conclusions of pathologists would do well to consult Mr. Macnamara's book.

One point our author insists on is, that in the investigations made by men of the highest scientific reputation, all have failed to discover any evidence of blood-poisoning, or of any new element, or pathological change to the body, beyond the destruction of the epithelial cells of the intestinal canal, and the consequent dehydration of the blood. "There is nothing akin to a new cell growth; no vestige of the so-called process of inflammation; proof only of decomposition of the epithelium and mucous lining of the walls of the intestines, with its consequences."

Mr. Macnamara has apparently given a good deal of attention to the behaviour of cholera dejecta. He says that if we mix a sufficient quantity of cholera evacuations with a gallon of water, to make the mixture slightly opaline, and then place the mixture out in the sun in tall glass vessels, we may notice the following changes:—

At the end of 24 hours, the vibrio stage of decomposition is in full force, the surface of the fluid being covered with large vibriones.

On the second day, the same changes will be noticed.

On the third day, ciliated infusoria will have appeared in the fluid.

About the eighth day, bubbles of gas will be seen rising to the surface of the liquid, and the sides of the vessel will be lined with confervoid growths.

Mr. Macnamara is prepared to state that the contaminated water was certainly poisonous during the vibrio stage of decomposition of the cholera stuff, and that the fluid may be drunk with absolute impunity after the bubbles of air have begun to form in it, and the confervoid growth has taken the place of most of the ciliated infusoria. Beyond this he has very strong grounds for believing that immediately the organic matter has passed through its vibrio stage of decomposition, it becomes harmless. Mr. Macnamara does not detail the experiments which induce him to offer these opinions, but knowing what we do of the author's conscientious work in whatever he undertakes, we are quite prepared to admit that he has satisfied himself, by direct observation, that water poisoned by cholera stuff will, in a few days, again become quite innocuous by a natural process of purification.

An important point in connection with the mystery that now and again attaches to outbreaks of cholera, is to some extent cleared up by Mr. Macnamara. The author states as a fact that cholera-matter, allowed to dry on linen, clothes, furniture, soil, &c., will retain its peculiar properties for any length of time, if the access of moisture be prevented.

He states, "I have some of the dejecta of a cholera "patient, passed some seven years ago, and which I mixed "at the time with sand, and allowed the mixture to dry ra- "pidly under the heat of the sun. A small quantity of this "earthy-looking stuff, if placed in water, and exposed to "the sun, could not be distinguished from a fresh cholera "stool, and I have little doubt it possesses all its deadly "properties."

Another experiment would seem to show that where moisture is present in the soil or media, the cholera-stuff soon loses its peculiar properties; it undergoes the change which renders it harmless. "If a pot of earth, with a small "hole in the bottom, be placed in a dish containing water, so "as to keep the mould in the pot constantly moist, and if a "quart or so of fresh cholera flux is poured over this earth, "say once a week, we should find at the end of a month, if "the contents of the pot are emptied into a pail of water, "that all vestiges of the cholera material have disappeared;

"it has, in fact, become oxidized, and the washings of this "earth may be drunk with impunity."

All this goes far to show that the active life of the cholera molecule or germ is of very brief duration. Its vitality, like that of vegetable seeds, is dormant so long as moisture and heat combined are excluded, but when these are present, it soon bursts into activity and passes through the poisonous stage of its development.

Mr. Macnamara thinks with most of our leading sanitary authorities, that the cholera molecule is capable of being destroyed or rendered harmless by chemical means. Experiments made with cholera stuff in the vibrionic stage, when the vibriones are in active movement, prove that when the alkaline fluid they thrive in is made acid, as by the addition of sulphate of iron, the infusoria and molecular action are instantly destroyed, and as long as the fluid remains acid, the latter will not recommence.

Mr. Macnamara maintains "not from conjecture, but observed facts," that cholera dejecta treated in this way are harmless. The action of an acid in arresting the molecular change in cholera matter, affords a plausible explanation of the reason why, of a given number of persons exposed to the same source of infection (*e. g.*, a contaminated water-supply), only a certain number will show any signs of cholera poisoning. Healthy gastric juice, either of men or animals, it is proved, has the same effect in arresting the molecular action of the vibriones of cholera dejecta, as sulphate of iron has. So long as the gastric secretion is in a healthy state, and vigorous in action, it is evident that a man may drink a good deal of cholera stuff in water, and yet take no hurt thereby.

But supposing that he drink poisoned water when the stomach is empty, or with no gastric juice in it, it seems probable that the peculiar action of such a fluid on intestinal epithelium would in no way be hindered; or if a large quantity of water be drunk, some of it may pass on at once to the small intestines, where no acid secretion would interfere with it. On the contrary, as the juices of the small intestines are generally alkaline, the conditions for the development of the deadly properties of the water would be perfect. Doubtless, where cholera poisoning by water occurs, the true explanation is that the natural sentinel of a healthy

gastric juice was not at its post when the enemy sought an entrance.

In regard to the influence of temperature on cholera dejecta, Mr. Macnamara is disposed to think that the infecting matter might be kept dormant in water, at or below 40° Fah., and on being exposed to a temperature of 80° or 90°, become as active as ever. A temperature of boiling water, in weak solutions, renders cholera evacuations harmless. In regard to the action of dry heat, Mr. Macnamara expresses himself more doubtfully.

Mr. Macnamara states that he has experimented on the communicability of cholera to the lower animals, but with purely negative results. In repeating the experiments of Dr. Burdon Sanderson, in feeding white mice with cholera dejecta, he has failed in communicating the disease to those animals.

In the treatment of cholera, Mr. Macnamara's suggestions appear to be sound and sensible, according to our present lights as to the pathology of the disease. He advocates opium in the early stages, and insists that *acids* have the power of arresting the molecular changes in the intestinal epithelium, provided we can bring the acid into contact with the interior of the bowel. A mixture of sulphuric, acetic and carbolic acids, finds most favor with him; and as regards this point of practice, we believe that medical officers in Southern India are entirely in accord with him. Alcoholic stimulants in the two latter stages of cholera are condemned most emphatically. Chloroform inhalation, to subdue pain and restlessness, is spoken of approvingly, and friction to relieve cramps is said to be useful. But with all methods of treatment, it is well to bear in mind the author's remark that "cholera is so insidious a disease, that irrepara-
"ble damage is often effected in the walls of the intestines,
"*before either the patient or the doctor is aware of the*
"*existence of any evil at all:* it is this fact which should
"make us realize the importance of the preventive over the
"curative plan of treatment. We have it in our power to
"prevent cholera; we necessarily must often fail to cure
"it; for the mischief is all done in many cases, and the
"patient really a dead man, before any urgent symptoms
"of this terrible malady have manifested themselves."

In the collapsed stage of cholera, Mr. Macnamara thinks that the less of medical treatment a patient gets, the

better it is for him. In the stage of reaction, supposing no urine be passed, he adopts the plan of the late Dr. Ford of the Madras Army, in stimulating the action of the kidneys, by giving Tincture of Cantharides.

The injection of saline fluids into the veins Mr. Macnamara has had no experience of, but the success of the plan in the hands of Mr. Little, of the London Hospital, in 1866, would seem to have been favourable. His formula was

Chloride of Sodium	60 grains.
Chloride of Potassium	6 ,,
Phosphate of Soda	3 ,,
Carbonate of Soda	20 ,,
Distilled water	20 ounces.
Alcohol	2 drams.

Mr. Little injected as much as 120 ounces of this fluid into the median basilic at the bend of the elbow, the injection being carried slowly on, so as to occupy half an hour or more. Mr. Little's apparatus consisted of a jar containing the fluid, placed at such a height as to allow of the fluid pouring by gravitation through an elastic tube fitted with nozzle and stop-cock, the point of the nozzle entering the vein.

We have not heard of any trials of this plan of treatment in India, though in many cases of deep collapse it might possibly help to keep the circulation going, thus giving a chance of natural reaction. We might suggest further, that as Dr. Halford of Melbourne has demonstrated that liquid ammonia may be injected *into a vein* in snake poisoning without ill effects, and apparently with great benefit, as a ready stimulant to failing vital power, there can be no reason why this powerful remedy should not be tried in cholera also.

The trials hitherto given of ammonia injection have been limited to hypodermic application, and from the known caustic action of strong alkaleis on animal tissues, the results, as might have been anticipated, were chiefly deep sloughing of the cellular tissue, and troublesome ulcers, in those who rallied from the cholera collapse, In two cases, at the least, death resulted from sloughing produced by the hypodermic injection. Halford has shown clearly that caustic ammonia, mixing with the blood current in a vein, produces no local mischief. He has recently injected

ammonia into the ventricles of the heart, in animals under chloroform, without any injury to the lining membrane or arteries, and he shows clearly enough that no one need be afraid to inject a solution of ammonia, very slightly diluted, into a superficial vein.

In regard to preventive treatment in epidemic seasons, we should do well to remember the sanitary importance which the old Roman Legions attached to a plentiful supply of salt and vinegar. It has been shown that in a normally healthy gastric juice, it is very doubtful whether the cholera molecule can preserve its vitality. If an acid be wanting in the gastric juice, we may take the most efficient means for supplying it, by increasing the daily allowances of salt, and if the system require a special preventive against "zymes" multiplying within the body, common vinegar, either pure or in the form of pickled vegetables, is perhaps as good a remedy as can be used. We should much like to see the anti-choleraic powers of salt and vinegar tested, by their special issue to troops during seasons of epidemic invasion.

Our notice of Mr. Macnamara's book has on many points been hurried and imperfect. It remains for us to state that we regard it as the very best work of the kind that has yet appeared, and we confidently recommend it to our younger brethren as a safe guide in all that relates to the etiology and treatment of cholera.

(To be continued.)

Chloride of Ammonium a Specific Therapeutic Agent in the Treatment of Hepatitis and Abscess of the Liver, with illustrative cases. By W. Stewart, M. D., Surgeon 2/21st Fusiliers. Rangoon : British Burma Press, 1870. Pamphlet, pp. 28.

It would be ungenerous on the part of an Editor to offer criticisms upon communications with which he has been favoured for publication. And as the contents of Dr. Stewart's pamphlet have already appeared in this Journal (See Nos. for June and September of the present year), we feel that, even were there any points open to unfavourable remark, the critic is disarmed.

But in the pamphlet before us, we find nothing at which to cavil. Dr. Stewart claims no originality in the use of the remedy he vaunts, beyond perhaps his being the first to publicly advocate the universal and persistent employment of the drug in acute hepatitis. And when a physician is able to pen such sentences at the following, he surely is justified in claiming some credit for his successful practice.

"In the Head Quarters 2/24th Regiment, Rangoon, and Detachment Port Blair, out of a total strength of 795, there were, during the year 1868, 32 admissions and five deaths from hepatitis. * * P. M. Hepatic Abscess.

"During the same period (1868) in the 2/21st Fusiliers at Secunderabad, out of an average strength of 868, there were 86 admissions and six deaths from the same cause. The disease was treated on the usual expectant plan and with a result not very satisfactory.

"Compare these figures with those which follow, and see how different the result obtained under the treatment by Chloride of Ammonium.

"Since September 1st, 1869, to May 31st, 1870 (a period of nine months), there have been 31 admissions from hepatitis at this station, out of an average strength of 608. Of these, six were undoubted cases of abscess of the liver, and in several abscess was strongly suspected. All of the above were successfully treated, without a single death. It is also remarkable, that since the arrival of the battalion at this station at the end of December 1868, up to 31st May 1870, embracing a period of 17 months, there have been 58 admissions from hepatitis and but one death."

All honour then to Dr. Stewart for bringing early and prominently, before his professional brethren, cases illustrative of the value of a remedy which has proved so successful in his hands.

Many years since we used the ammonium chloride in large doses in cases of persistent neuralgia with good effect, and within the last few years we have administered (and have taken) the salt in small doses (5—8 grains) combined with nitro-hydrochloric acid, in chronic hepatic affections, and have been satisfied with the result. Since the appearance of Dr. Stewart's article in the *Lancet*, we have also used the salt according to his directions in

several cases of acute hepatitis, and with success in each instance. Two cases are still under treatment, and we may perhaps have the opportunity, by publishing these cases, of affording Dr. Stewart evidence that his advocacy of this treatment has not been in vain. In conversing with Sir Ranald Martin on this subject, about eighteen months since, we learnt from that gentleman that he has for a long time been in the habit of using chloride of ammonium in combination with various other drugs, alkalies, acids, taraxacum, &c., in cases of chronic diseases of the liver, and he spoke in high terms of the "cleansing" effect of the salt upon the biliary ducts.

Dr. Stewart's pamphlet now places this salt in a different light, and although we may not be so sanguine as to look upon it as a "specific" in acute hepatitis, yet we strongly recommend our readers to give it a trial, and to let Dr. Stewart have the satisfaction of knowing how far the practice of others coincides in success with his own.

We need scarcely add that Dr. Stewart does not simply content himself with mentioning the mode of administration of the chloride, but also lays down rules for the diet, regimen, and general nursing of the patients, so that a perusal of his pamphlet is necessary before attempting to put his plan of treatment in operation. And we cordially recommend our readers to make themselves acquainted with what he has to say upon the management of cases of acute hepatitis.

MEDICAL MISCELLANY.

Case of abortion induced on account of uncontrollable vomiting. Communicated to the Paris Société de Médicine by Dr. Charrier.

The case which I am about to read to you is one of abortion brought on in a woman two months pregnant, who had been suffering from uncontrollable vomiting for 47 days, which had endangered her life to such a degree that death was imminent. I was summoned on the 6th of last October, at ten o'clock P. M., to see a young woman who, I was told, was in danger of dying in consequence of uncontrollable vomiting caused by pregnancy. Dr. Lemaire had requested my advice in consultation. He was unable to attend that evening, so that we did not meet until the following morning at 11. I then found that his patient, Madame G., had been married since the previous May, was 22 years of age, and had never been ill except when she was eight years old. She said that she had had, at that time, a fever, but could give no further account of it. Since then she had not even been indisposed. On the 1st August she had had her last period, and since that date had seen nothing. Conception must have taken place between the 10th and the 20th of the same month. Since the 25th she had vomited eight or ten times every day, rejecting all her food. She used to retain her breakfast sometimes for an hour or two; but since the 1st September, she could bear nothing on her stomach. Ten minutes at most after the ingestion of anything whatever, even pure water, she threw it up, the vomiting always ending with a few mouthfuls of green or yellow bile. Dr. Lemaire prescribed for her everything which could be prescribed in such a case—opium, belladonna, antispasmodics, ice, iced champagne, a blister to the epigastrium dressed with morphia. Nothing availed; there was no improvement. Dr. Bossard was then called in, and tried other means (amongst them pepsine,) which had no effect. Dr. Lemaire was recalled, and tried some other drugs, which

were also unavailing: then he summoned me on the 6th October. This was the condition of the patient. She was very pale, her complexion earthy, her eyes sunken and brilliant, she was much emaciated, her lips were bright red, her tongue white, her teeth covered with sordes, her breath fetid and sour. The belly was painful from the efforts in vomiting. She had vomited 36 times in the last 12 hours, always throwing up bile, and sometimes, at the end, a little blood. After the attack, she falls exhausted, inundated with cold sweat. She can scarcely turn in her bed or assume a half sitting posture without falling into a state of syncope. The pulse is very weak, very quick, very compressible, beating 140 to 150 times a minute.

Her condition seemed to me very serious, but I wished still to try something, and as Dr. Lemaire was unable to come, I prescribed ice on the pit of the stomach, and iced champagne; and I anointed the cervix uteri with ten centigrams of extract of belladonna. She had a better night, with only five or six vomitings. At 11 o'clock in the morning, I met Dr. Lemaire at Madame G.'s bedside. As she had passed a better night, with fewer attacks, I proposed, in spite of the husband's and the patient's entreaties, to wait three or four days more. Perhaps belladonna continued as an ointment on the cervix and the external parts might subdue the vomiting. The ointment was reapplied at 11 A. M. The day passed tolerably well, with only eight or ten attacks, but the night between Friday and Saturday was deplorable, with 25 to 30 paroxysms. The patient's anxiety was increasing, her weakness becoming more marked, and during the night of Saturday to Sunday morning she vomited 46 times—her husband and a nurse, who never left her, noting everything that occurred. The state of syncope was almost continuous, and on Sunday morning, at ten o'clock, the pulse was almost imperceptible at the wrist. Iced brandy was rejected. We decided then, the state of affairs being so serious, to induce abortion.

It was very evident to us that life could not be much prolonged, and that it was necessary to act as quickly as possible. On the same day, therefore, Sunday the 10th October, I introduced Cusco's speculum. The os was very slightly open; I was able, however, to introduce a flexible bougie of small diameter. In the evening, Dr. Lemaire got in a little cone of prepared sponge. On the following morn-

ing, Monday the 11th, at 10 o'clock, I withdrew the prepared sponge, and introduced an india-rubber sound, of Tarnier's pattern, and diluted with tepid water. The apparatus remained in position until six o'clock, when it came away, and Dr. Lemaire introduced a piece of sponge. The night, as well as the day, was disturbed by incessant vomiting. The patient was becoming weaker and weaker. Some uterine pains were felt.

12*th*.—Tuesday morning I replaced a tube, which I diluted with tepid water. The pains were becoming more frequent, the vomiting continued, and during the night was estimated to have occurred 25 or 30 times. The apparatus still distended, fell out of itself, proving that dilatation had taken place to a considerable extent.

13*th*.—Wednesday, at 10 o'clock, I ascertained that dilatation was sufficient. The cervix was almost completely obliterated, and the ovum was felt on the point of engaging in the internal os. Pains were going on. I ordered a full bath, which was given. The pains were suspended for three hours, from one o'clock to four, a period which the patient employed in sleep, which she had not enjoyed for 14 or 15 days. Then the pains returned with force and regularity, and at 3 A. M., the membranes broke. She was given a little wine with sugar, iced ; which she threw up at a quarter past three. The pains became quite expulsive, and at half-past three the entire ovum, placenta and embryo, was expelled. Little blood was lost. At a quarter past four, iced wine sweetened was given, which she retained, and she did not vomit afterwards. Her convalescence was rapid. The patient got up on the 4th November for the first time, and she has now resumed her ordinary habits.

Twelve hours after the abortion the pulse fell from 150 to 110, and 24 hours after, the pulse was 84. It was really a case of fever from inanition. During the first 24 hours, she took four cups of soup, some tapioca, and on two occasions a little sweetened wine with bread. Not only the vomiting, but the feeling of nausea disappeared immediately upon the expulsion of the ovum.

This dilatation with caoutchouc is undoubtedly the surest and most effectual means of inducing abortion: dilatation by water resembling most closely the natural process of dilatation in labor. It forms a new amniotic bag, which dilates both the cervix and the soft parts: and I have often

asked myself whether, in primiparous cases, when the maternal soft passage is extremely narrow, it would not be beneficial, after the os is half dilated, to dilate the vagina with an india-rubber bag. Time would be gained, and pains diminished in number. At any rate, I intend to try the experiment, so as to abolish the latter stage of labor which is so painful in primiparæ.—*Jour. des Conn. Méd.*

Case of uncontrollable vomiting during pregnancy, with death impending, cured by local bleeding.

[With reference to the foregoing case, the following letter was addressed to the editor of the periodical in which it appeared.]

In April 1857, I sent you a case of cure, by means of local bleeding of the uterus, of uncontrollable vomiting. The patient was in the third month of pregnancy, when the complication supervened, and the vomiting continued uninterruptedly for 28 days, the paroxysms succeeding at intervals of from two to five minutes. The patient had reached a state of emaciation which foreshowed death close at hand; when, having exhausted all other means without success, I applied (with the concurrence of two professional brethren), leeches to the cervix uteri: being convinced that this sympathetic vomiting depended upon a condition of firm engorgement of the uterus and a strangulation, as it were, of the cervix, which did not allow of the normal extension of the parietes. The result proved in favor of this view, for the patient was safe twenty-four hours after.

* * * *

This recal of a fact twenty years old is a reply to the case of induced abortion in a case of uncontrollable vomiting, published in your number of the 20th March. Artificial abortion is a very serious thing in every point of view; and if the means which I employed, and which in my hands *succeeded twice,* had been used by your contributor, he might perhaps have taken credit to himself for the preservation of two lives. There is one case—one only so far as I know,—in which abortion ought to be induced without hesitation. This is when there is so contracted a pelvis that the cæsarean operation would become inevitable; so that the accoucheur would entertain the horrible thought

of killing the mother, (consult the statistics), rather than that the infant torn from her bowels should not receive the water of baptismal washing.

* * * *

Prognosis in Bright's Diseases.

Dr. Austin Flint read a paper at a Meeting of the Medical Society of the County of N. Y. with the above title, of which we present an abstract.

After a discussion of the elements which enter into prognosis in general, showing that this must draw upon every department of medical knowledge, the speaker proposed to consider the prognosis in Bright's diseases: 1st, With reference to the different renal affections constituting Bright's diseases; 2d, With reference to their symptoms and complications; and 3d, With reference to their treatment.

1. *The Different Affections.*—The doctrine that the various lesions of the kidney, formerly comprehended under the term *Bright's disease*, are but different phases or modifications of one affection, is now nearly abandoned. We have come to speak of Bright's *diseases*, and the question now is, How many and what are the different affections to which this name has been applied? To answer this question completely is, perhaps, at present impossible; and this is not strange when we compare the history of renal pathology with that of the pathology and diagnosis of pulmonary diseases for example; when we recollect that it is but lately that pneumonia, bronchitis, and pleurisy were confounded. Bnt considerable progress has been made in the differentiation of renal affections; and, without canvassing disputed views, the five following may be enumerated as having their individuality as well established as the present state of our knowledge admits; (*a*) inflammation within the convoluted tubes, called by Johnson "desquamative nephritis," and by Dickson "tubal nephritis;" this, like other inflammations, may doubtless be acute, subacute, or chronic; (*b*) the "smooth white kidney;" (*c*) the fatty kidney; (*d*) the fibroid, contracted, atrophied, or cirrhotic kidney; (*e*) the waxy, lardaceous, or amyloid kidney.

With regard to prognosis these five affections widely differ. Desquamative nephritis may, and perhaps commonly does,

end in recovery, leaving the structure of the kidneys intact. But it probably sometimes leads to the smooth white kidney, and perhaps also to the fatty kidney. Whether recovery from either of these conditions ever occurs, it is impossible to say; but it is "highly probable that, having progressed to a certain extent, the morbid process or processes, whether imflammatory or not, which these diseases involve, may cease, and retrogression take place, leaving at length the organs, if not intact, not damaged enough to compromise seriously their functional capacity. . . . . The cirrhotic kidney must be regarded as involving a permanent lesion; . . . but even this may cease to be progressive, after a greater or less amount of damage, and recovery be possible in the same sense as recovery from tuberculous disease of the lungs is considered as having taken place, that is, the morbid processes cease, and there are no longer any symptoms of disease, but the functional capacity of the organs is more or less impaired." The waxy kidney is of less practical importance, being so rare. It is possible that its peculiar lesion may disappear, or at all events become non-progressive, leaving the kidneys with functional capacity sufficient for life and even for health.

The prognosis, then, is by far the most favorable in desquamative nephritis, and decidedly the gravest in the cirrhotic kidney. Hence the importance of an accurate differential diagnosis. But it is not always possible even to diagnosticate desquamative nephritis; nor can we determine, in the case of the other four affections, whether the amount of damage suffered is incompatible with comfortable health for an indefinite period.

In an analysis of one hundred and three cases, mostly observed and recorded by Dr. Flint himself, there was good ground for believing that in twenty-two recovery took place. In several of these twenty-two cases it was quite certain that the disease was tubal nephritis; but in others of them there was room for supposition that there were other lesions which had ceased to progress. This analysis illustrated in a marked manner a very important point, "the ability of the system to tolerate Bright's diseases when they are progressive as well as when they are stationary." Many of the hospital patients had been discharged, feeling well enough to return to their toilsome vocations. In many cases the patients had continued to labor for weeks and months after the appearance of œdema of face and limbs. Of fifty-three cases whose previous history

showed no antecedent disease, in thirty the general health was apparently good up to the special manifestations of renal disease, that is, either dropsy or uræmic phenomena. In six of these thirty cases, uræmic coma or convulsions constituted the first special manifestations. Two of them were related at length, and these conclusions drawn : (*a*) "Coma and convulsions may occur when the health to all appearance is good, the disease destroying life, as it were, by a sudden explosion. The most frequent disease in such cases, undoubtedly, is the contracted kidney. (*b*) Renal disease may exist for a long period, that is, for years, without giving rise to any notable manifestations, and without compromising apparently the general health."

2. *Symptoms and Complications.*—"The ability of the system to resist and recover from any important affection is more or less impaired by its occurrence in connection with Bright's diseases." It therefore becomes important in the prognosis of such affections to determine whether or not renal trouble exists, perhaps in the latent form. For this we must rely upon the urine ; and in considering its testimony it is to be remembered that albuminuria may exist, without indicating any of Bright's diseases, and also that one or more of these may exist, though rarely, without being indicated by albuminuria.

As to complications, observation has shown that the serous inflammations, pleurisy, pericarditis, peritonitis, and meningitis may be caused by Bright's diseases ; and that when so caused they are commonly fatal, with the exception of pleurisy, which is itself far more dangerous than when occurring as an independent affection. There are strong reasons for believing that "simple hypertrophy" of the left side of the heart is an effect of renal disease ; and that in this connection, as in the case of hypertrophy dependent on valvular lesion, it is probably conservative, and so does not render the prognosis more unfavorable. Valvular lesions can hardly be charged to the account of the kidneys. When they coexist with renal disease, their own evils and dangers are to be added to those of the renal trouble.

As to symptoms, uræmic coma and convulsions always involve great immediate danger, sometimes destroying life in a few moments. Yet the patient may survive them, and make a complete recovery from the renal disease ; or if this disease progresses, still "the attacks may recur after long intervals,

during which there may be an appearance of recovery, inclusive even of the disappearance of albumen and tubular casts from the urine." Uræmic vomiting and purging betoken danger of coma and convulsions; they also involve danger from innutrition and asthenia, which may even prove fatal. Dropsy is not of itself a specially unfavorable sign, but it may become so if persistent and returning speedily after removal, particularly if associated with great anæmia and prostration. In certain situations it of course involves great immediate danger, as in œdema of the lungs and of the glottis. As a rule, in proportion as general dropsy is great, the urine contains albumen in abundance. But there seems to be no constant relation between albuminuria and the uræmic phenomena. That there is a relation between these phenomena and the amount of urea excreted, there can be no doubt. But our data are as yet insufficient to establish any fixed rule with reference to this relation.

Treatment.—That the prognosis, in many diseases, depends greatly on our power to control them by treatment is evident. How is it with Bright's diseases? We have no specific against them; but we may unquestionably sometimes postpone or prevent their worst effects—uræmic coma and convulsions, with their terrible dangers—by therapeutical interference. We may save a patient, otherwise doomed to die within a few hours, by the energetic use of hydragogue purgatives, elaterium being incomparably the best, and by the hot air or vapor bath. The elaterium is no less valuable in the symptomatic hydrothorax and pulmonary œdema.

"The first great object of treatment of the Bright's diseases which involve structural lesions of the kidneys is the arrest of their progress. The next great object is the retardation of their progress. And when these objects are beyond the resources of medicine, a great object still remains, namely, to secure for the longest possible period, and as completely as possible, the tolerance of these diseases. Of course the prognosis is affected favorably in proportion as these several objects lie within the grasp of treatment." As we have no specifics, and even the palliative cathartics and diuretics may do harm rather than good if persisted in, our general treatment resolves itself into that which places the system as a whole under the best conditions. A great part of this will be hygienic, and the most important considerations relate to climate. Dickinson's statistics show that

the ratio of deaths from renal disease to the total number of deaths is, in London, 1 to 49; in Paris, 1 to 266; while in Bombay it is 1 to 2800; and in Genoa 0 in 4303. The records of the hospital in Milan give 1 case of dropsy with renal disease to 2807 admissions; those of St. Mary's Hospital, London, 1 to 31. The statistics of the British army show the proportion of deaths from renal disease notably greater in temperate climates than in either tropical or cold ones. These facts warrant the expectation in cases of chronic Bright's diseases occurring in temperate climates, that arrest of the diseases, or retardation of their progress, as well as increased and prolonged tolerance of them, may often be effected by a timely change of climate." It is very desirable to collect cases showing the results of such change. As Paris and London offer so marked a contrast, it is possible that changes not involving removal to great distances may prove very serviceable.

Dr. H. Knapp referred to the importance of retinitis as a prognostic sign in Bright's diseases. It was commonly stated that retinitis occurred only in the advanced stages of the renal affection, and this was true of the vast majority of cases; but sometimes it presented itself even in the early stages, so that the ophthalmoscope might determine the diagnosis months before any thoracic or cerebral symptoms appeared. In many cases the engorged veins would diminish in size, as also the exudations and hæmorrhages and spots of fatty degeneration; but relapses were almost sure to occur, so that, where retinitis existed, it was pretty safe to predict a fatal result. Yet exceptions to this rule were to be found, and the doctor had met with some in his own practice. One patient, whom he had found affected with retinitis in 1862, and had supposed long dead, turned up five years later in full health. Another, a man forty or fifty years of age, had Bright's retinitis in one eye, and said that he had recovered from a similar attack in the other eye some eight years before. The multiplication and peculiar contortion of the retinal vessels, as exhibited in these two cases after recovery, the speaker had never seen paralleled. [They were shown in a blackboard drawing.]

Dr. Newman believed that the ophthalmoscope gave the only reliable indications for prognosis in Bright's diseases. He was in the habit of submitting all such cases to its decision, and this the event had always verified. In half a

dozen cases examined by Dr. Althof, the prognosis had been very accurate. Perhaps the most striking cases were those where the examination gave a negative result. A woman, under the speaker's observation for seven years, had several attacks of œdema with albuminuria, leading to the diagnosis of Bright's disease. About four years ago these symptoms were very marked. She went to the New York Hospital and remained there over ten months, thus coming under the observation of the whole staff, who all concurred in the diagnosis. The urine showed casts and albumen in abundance. Dr. N. followed up the case, expecting the patient's death; but after ten months she got well. Soon afterwards she had another attack. It occurring to him that no ophthalmoscopic examination had been made, she was sent to Dr. Noyes, who reported a negative result; and she was still alive.

Dr. Gouverneur M. Smith thought that renal disease might be held responsible for certain affections of the ear, as it was known to be for those of the eye already referred to. Albuminuria in Bright's diseases he was inclined to regard as an instance of nature's conservative action, the kidneys relieving the blood of an excess of albumen. The question of climatology in these affections he deemed one of great importance. He had discussed it quite fully in a paper recently presented to the Academy, containing reports of 308 cases; and his statistics upon this point, to some of which he referred, might prove of value. A favorite mode of treatment in the Bellevue and New York hospitals was the use of the hot-air bath, in conjunction with Spts. Mindereri and Ipecac, inducing profuse diaphoresis and diuresis.

Dr. Neftel remarked that the prognosis in Bright's diseases depended very much upon the diagnosis of the special form we had to deal with, and this could often be pretty accurately determined. For instance, it was not very difficult to distinguish amyloid degeneration from the other forms, taking into account the clinical history of the case. This form of degeneration of the kidney might be caused by constitutional syphilis, tuberculosis, caries and necrosis of the bones, or, lastly, chronic ulcers of the limbs. Professor Fischer, of Breslau, had shown that chronic ulcers of the legs, if allowed to persist unhealed, invariably led to amyloid degeneration of the kidney. Hence the cure of such ulcers became a matter of great importance; and we had the means of effecting it in Langenbeck's continuous bath,

electrolysis, etc. In amyloid degeneration the urine was peculiar, having a high specific gravity and a very dark color. It contained the special coloring principle, indican, which could be extracted by appropriate means. Under treatment with strong sulphuric acid, but without the addition of sugar, this gave the same play of colors as the biliary acids under Pettenkofer's test. In illustration of the certainty of diagnosis, the speaker referred to the case of a man who had come to him for heart disease. This was set aside by the examination, and the patient pronounced to have amyloid degeneration of the kidneys. He afterwards went for treatment to Heidelberg, where he died, the post mortem confirming this diagnosis.

A test for albumen, more delicate than those commonly employed, was identical with Trommer's test for sugar. Some specimens of albuminous urine would yield no precipitate with heat or nitric acid; but on treating them with a solution of sulphate of copper and potassa, the supernatant liquid, after the subsidence of the precipitate, would be left of a beautiful and characteristic purple color. The presence of grape (diabetic) sugar did not interfere with this test; so that both sugar and albumen might be tested for at once, the sugar being shown by the cuprous oxide, and the albumen by the purple color.

As to the treatment of Bright's diseases, in Russia, the speaker's own country, the milk cure had found great favor,—the patient drinking milk in large quantities, and taking no other food or medicine. The results of this plan were often wonderful, the patients greatly improving and the albumen disappearing from the urine.

Dr. Peaslee had listened to the paper with much interest as showing how great progress had been made, even within a very brief period, in our knowledge of renal diseases. He thought, however, that the nomenclature was still defective. The phrase "tubal nephritis" should be discarded, as synonymous with "acute desquamative nephritis," and the transient affection denoted by it should be struck from the catalogue of Bright's diseases, from which it differed as much as pleurisy or pneumonia from phthisis. As to climate it was probably credited with much that did not belong to it. For instance, there could hardly be so great a difference of climate between Paris and London as to account for the reported difference in the prevalence of Bright's diseases.

Dr. Caro (?) thought that the influence of climate, whether for the production or for the palliation of Bright's diseases, had been greatly exaggerated. The effects attributed to it were doubtless in great measure due to the habits of the people in different countries with regard to the use of wines or stronger liquors. He had noted this in Italy, where the Neapolitans were addicted to strong spirits, and were more subject to Bright's diseases than the residents in other states, under the same conditions of climate, where wines were drunk almost exclusively.

Dr.——, during three years' quite extensive practice, both civil and military, in New Mexico, had found but one case of albuminuria, although there was a large amount of very bad whiskey consumed there. The climate of that region was exceedingly dry.

Dr. Hanbury Smith could say that in Sweden, during his long residence there, he had found Bright's disease occurring almost exclusively among those accustomed to the use of distilled liquors. Deaths from this cause were frequent in hospital. But among the better classes, where wine was the ordinary stimulating drink, the disease was much rarer. The race and habits of life of a people were quite as important etiological elements as climate. Whatever their cause, the peculiarities of the Scandinavian race were strongly marked. On one occasion, in an examination of many thousand children, in the orphan asylums, he had been unable to find a solitary instance of true scrofulous diathesis. Again he had never seen a case of gout in a true Scandinavian. On the question of climate, it was not to be forgotten that a large proportion of the inhabitants of nothern countries pass the winter months in an artificially warm climate, with close double windows and an unvarying heat from porcelain stoves. He had himself suffered more from cold in a single winter in Ohio than in the many he had passed in Stockholm.

Dr. O'Sullivan thought that the use of the sparkling wines was prophylactic.

The President said that this matter of the effect of climate on renal diseases was one of the great questions to be determined in the future. As bearing on the value of statistical results, it was necessary to learn whether examinations of the urine were as faithfully and thoroughly made in some cities as in others, both in the hospitals and in private

practice, which was always influenced by that of the hospitals. And if it were proved, as doubtless it would be, that climate is a powerful agent in these diseases, had we not within our power, as already suggested, such control over climate as to give our patients its greatest benefits without sending them from home? Could we not, by the more systematic use of the Turkish and the Russian bath, established in our hospitals and brought into our houses, produce that increased action of the skin which would be insensibly brought about by the change to a warmer climate, and so realize its chief advantages? Let the experiment be carefully tried in a hundred cases, and it would go far towards settling the question.

The milk treatment, spoken of by Dr. Neftel, ought certainly to command general attention. Patients, who had given over every other form of treatment, came to this with results almost incredible, according to statements in the foreign journals.

In conclusion, the speaker would express his yearly strengthening conviction that a favorable prognosis might, much oftener than he had once supposed, be made in cases of albuminuria in puerperal convulsions. Though successive pregnancies should exhibit severe convulsions, with the urine highly albuminous, and of low specific gravity, yet, at the end of twenty years' hospital practice, he felt that if the patient could only be carried well through the labor, the prognosis was much better than, even five years ago, he should have dared to hope. He had followed a number of such cases through years of subsequent health.

Dr. John O. Stone could endorse the President's remarks concerning puerperal albuminuria. He had made a point of following up all such cases as had occurred in his own practice; and he deemed this very important, that the profession might have the benefit of trustworthy statistics to the results. He would mention one striking case: Ten or eleven years ago he was suddenly sent for to visit a woman in confinement; all pains had ceased, and her medical attendant suspected rupture of the uterus. She was terribly exhausted, and had lost the sight of one eye. The urine showed abundance of albumen. The patient was stimulated, and the baby was born but died soon after. The woman then came under the speaker's care. For six years she had albuminuria; but for the last four years this had not appeared. She had not again become pregnant.—*N. Y. Med. Rec.*

Case of cerebral symptoms simulating meningitis caused by ascarides in the rectum.

A CHILD, about six or seven years old, living with its parents in a dark room, in which nothing could be seen distinctly at noon, was seized with symptoms which led me to fear an approaching attack of tubercular meningitis. Under observation the child soon proceeded to realize my unfavourable prognosis. The well-known symptoms of meningitis were developed, and soon attained a fearful degree of severity. I shall not enter into the details of the case. One symptom only was wanting to complete the picture of meningitis. Constipation, which is the rule in that disease, was here replaced by diarrhœa. This fact alone was enough to give me some hope, by enabling us to admit the possibility of another disease. Guided by this irregularity, I administered santonine, without any result. I might have given calomel but nothing would have been gained by it, and it was necessary to control the purging. In vain I questioned the mother. I could learn nothing to enlighten me, when it occurred to me to try lavements of soot, thinking that the symptoms might be due to ascarides. My belief in these worms was brilliantly rewarded. Ascarides were expelled in great numbers; the cerebral symptoms disappeared in a few hours, and the patient, lately apparently dying, was almost suddenly restored to health. It was precisely this rapidity with which the symptoms disappeared which finally convinced me of the exclusive influence of the ascarides upon the development of my little patient's malady. —M. VIGNARD *of* NANTES, *in Jour. de Méd. de l'Ouest.*

Re-vaccination in France.

M. VERNOIS presented to the *Royal Academy of Medicine,* a note on re-vaccination practised in schools and jails in Paris, in March 1870. The results were as follows:—

At the Napoleon Lyceum out of 400 re-vaccinations, 229 were made with the vaccine of a heifer, and of these only 34 were successful: 171 cases with Jennerian vaccine, and 53 successful.

At the Saint Louis Lyceum there were 273 re-vaccina-

tions with the vaccine of a heifer, of which 74 were successful.

At the Louis-le-Grand Lyceum there were 24 re-vaccinations with heifer vaccine, and none were successful.

At the Versailles Lyceum, 88 re-vaccinations with Jennerian vaccine; 34 successful.

At the Mazas prison, 162 re-vaccinations, with the vaccine of a heifer; 8 successful. At the prison de la Santé 150 re-vaccinations with heifer vaccine; 26 successful. Of these 26 counted as successful, there were only pustules of middling size, and from only a few among them could vaccine be collected. There were up to the 2nd of April 46 cases of small-pox at Mazas, and 34 at La Santé.

M. Vernois adds that it would be desirable that all physicians should make known to the Commission of Vaccine the official results of vaccinations and re-vaccinations performed by them.

M. Bouley observes that the want of favourable results in re-vaccinations made with heifer vaccine is due less to the method itself than to the means employed. That which is too often taken from the pustules of heifers is quite another thing than vaccine.

At Alfort and elsewhere, every time that true vaccine drawn from red pustules is used, good results have been obtained.

M. Vernois remarked to M. Bouley that the re-vaccinations to which he alluded were performed by M. Lanoix himself, that is to say, by the operator who was considered the most competent in this matter.

M. Depaul replied that M. Lanoix is the one who has made in recent times the worst re-vaccinations. We must not then argue against the method itself, because M. Lanoix has been unsuccessful. We must remember the results obtained with heifer vaccine in colleges and elsewhere, results described by physicians such as M. Guéneau de Mussy and other members of the Academy.—*Journ. des Conn. Med.*

Antimonial Variola. Chemical Vaccination preservative against spontaneous small-pox and animal vaccination. By Dr. HOFFMANN.

OF all antimonial preparations, tartar-emetic is undoubtedly the best suited for inoculation. Its ready solubility, and its rapid absorption, place it in the first rank. Taken internally in a dose of 5 to 15 centigrams, the antimoniated tartrate of potash acts as an emetic, often as a purgative. Under the influence of the vomiting, tartar-emetic produces agitation, considerable muscular relaxation, as well as great depression of the nervous system and the circulation. Injected into the veins in dose of one or two centigrams, it produces at first nausea and then vomiting, rarely purging.

Inoculated in a dose of one or two centigrams it produces the same symptoms as when injected into the veins, but its action is more slowly manifested. It brings on also exactly the premonitory symptoms of variola; such as violent pains in the back, especially over the kidneys, painful oppression in the epigastrium and vomiting, with fever. The papular eruption which first appears is exactly the same as that of variola, and the papules soon change into umbilicated pustules. When tartar-emetic is exhibited in centigram doses at intervals, nausea is produced, and subsequently depression of spirits, a small soft pulse, and considerable muscular prostration, which was formerly taken advantage of in surgery, for the reduction of dislocations. These are the same symptoms which appear in variolous patients at the commencement of the attack. There is at first elevation of temperature, then weakness of the pulse, lastly increased cutaneous secretion.

Applied externally, either in powder or in concentrated solution, tartar-emetic sets up inflammation in the skin. At first an eruption is developed which is commonly local, and affects only the region which has been chosen for operation. Sometimes, however, other organs are attacked, as the scrotum, the labia majora, or the hypogastric region. After 24 or 48 hours scattered red points appear, which have their origin in the cutaneous follicles, and exhibit, first a papular stage, then a vesiculo-pustular, with the characteristic central depression, which soon assumes a dark brown color. Then comes the period of desiccation. The crust, when it falls off,

leaves a stain, more or less red; and in time nothing remains but a white scar.

The *advantages of antimonial inoculation* are (1) that it can be effected at any time; (2) that the lymph can be preserved like vaccine, if collected before it has become opaque; (3) that arm-to-arm vaccination is facilitated; (4) that it is easy to engraft the antimonial variola on the cow, and thus re-establish or renew the cow-pox.

The *medicinal form* most convenient for the production of antimonial variola is the stibiated pommade of Autenrieth. Two or three frictions with this substance are made on the outer part of each arm; or two or three little discs of cere-cloth sprinkled with tartar-emetic. Each plaster should be of the size of a 20 centime piece, and should be left applied until redness and active inflammation, often with a little fever, are produced. The aqueous solution of tartar emetic is less convenient. It acts less powerfully, moreover, than the pommade or the plaster.

According to Buckstein (Hufeland's Journal 1844) we can obtain, by inoculating lymph taken from the pustules of antimonial variola, pustules absolutely identical with those obtained from Jennerian vaccine. This antimonial vaccine, which we shall call "chemical" or "artificial" vaccine, affords the same protection against variola as the old prophylactic. Lichtenstein, a skilful observer, established this fact. He made his first experiments in 1836. 31 vaccinations and re-vaccinations were performed with antimonial vaccine, and all gave the most satisfactory results. At that time an epidemic of variola was raging: and all who were inoculated with antimonial lymph escaped completely.

In the course of variola such intercurrent affections as bronchitis, pneumonia. &c., are frequent. In this fact, again, may be seen the action of antimony and the strong affinity which it possesses for the thoracic organs.—*Ib.*

The use of Sulpho-Carbolate of Potash and of Lactic Acid as solvents of croupous membrane. By C. C. Terry, M.D.

Fred. E———, 4½ years, lived in the same house with an uncle's family from which a girl of about Fred's age, and his constant companion in play, had died in about 48 hours from

the commencement of a disorder which was at first called "sore throat" and the next day "diphtheria." From the parents' account of the case, it seems to have been croup.

Ten days after the death of his cousin, Fred seemed less active than usual, inclined to mope, and ate but little.

The next day, November 30, 1869, the child coughed a little, seemed so feverish that the mother became alarmed lest there might be diphtheria.

During my attendance upon another child in the family, I had occasionally romped a little with Fred and the cousin, and my first observation now was of his unusual paleness and sluggish locomotion.

The throat was brawny, no glands distinctly enlarged; pharynx tumid, and, as also the fauces, streaked with a whitish material, whose appearance suggested muguet, especially as the uncovered parts were not perceptibly glazed. At this time the skin was dry and unusually warm, the pulse accelerated (apparently by fright). No complaint had been made of any symptom on the part of the child.

The muguet-like material was not easily detached, and left a red and bleeding surface, without apparent loss of substance.

A microscopical examination exhibited many blood corpuscles—the normal proportion of white; an immense number of irregularly circular and granular bodies, many as large as blood-corpuscles, but most smaller, and many without granular contents (pus and mucous corpuscles); many flat polygonal and nearly circular nucleated epithelia of various sizes; masses of finely granular material, spread out in considerable areas; and masses of coarser reddish granular material: altogether answering to Beale's description (Mic. in Med.): "There is nothing very distinctive in the exudation effused upon the surface of the mucous membrane of the fauces in cases of diphtheria."

A solution of sulpho-carbolate of potassa dissolved the parcel. So I was induced to sponge the throat with the same solution. Ice-water shrinks and stiffens the exudation; warm water has little solvent effect, as ascertained in other cases.

In the evening the neck was less brawny, the pharynx less tumid, paler, and exhibiting but slight traces of the exudation. But I was only at the upper margin of the objective disease, for the voice had become raucous, the cough brassy,

the cry constrained ; tracheal respiration harsher, and some râles.

Undertook to follow the exudation into the larynx and trachea with the sulpho-carbolate solution, and for a short time with seeming benefit. The pharynx had been very tolerant of the sponge and solution, but the laryngeal sensibility had become so obtunded, that only a slight cough followed the introduction of the solution. This was not encouraging for the lower air-tubes.

Prescribed a dose of the sulpho-carbolate, to be taken every third hour (Sansom in *Practitioner*, July 1869, p. 12). The child would take nothing but water and an occasional spoonful of beef-tea—not enough to count.

Dec. 1.—Slept last night. Pharynx clean, but still tumid and red. Voice more raucous ; cough more croupy ; respiration embarrassed, increased in frequency ; face anxious.

Sulpho-carbolate locally, and by stomach every hour. Auscultation discovered no change. Ice over larynx and trachea, not against the exudation so much as the probable subjacent congestion, which of itself might be able to embarrass respiration.

Dec. 2.—Larynx more desperately involved ; inspiration loud and harsh, respiration harsh; dyspnœa ; duskiness of eyelids and contour of mouth ; voice extinct ; no cough ; perfect anæsthesia of pharynx and larynx. An emetic did not assist in clearing the air-tube.

In the evening, increment of the dangerous symptoms ; inspiration and expiration stridulous ; under the ear but little air could be heard entering the deeper tubes and throughout most of the lung there was a silence, broken only by a frequent bronchial râle and an occasional normal respiratory murmur ; general cutaneous anæsthesia, or better, perhaps, inattention, for the little fellow walked excitedly around on his bed, and seemed intent only upon getting air into his lungs.

Respiration 52 per minute ; pulse about 140, diminishing and almost ceasing with each prolonged stridulous inspiration, increasing in force and frequency with the alternate expiration.

The knowledge that, in certain rare cases, at apparently the last moment, a portion of membrane has been expelled with saving relief, weighed but light against impending asphyxia ; and tracheotomy, in a trachea already diphtheritic, offers at least a mitigation of the agony.

At this juncture I was glad to share the responsibility with Dr. Jacobi, whose large experience in tracheotomy for croup makes his assistance excellent; and his kind hand lifted me over the difficulties of the operation. Chloroform was administered: under it respiration was something easier.

It was necessary to open as low as possible, and the trachea was both deep and small.

In the course of the operation the anterior mediastinum was pricked, as was announced by a hissing and crackling of visible minute bubbles with each inspiration and expiration.

The introduction of the tube was followed by calm respiration, the pulse lowering but a few beats. No cough; no expulsion of membranous fragments; but crying caused some swelling up of muco-sanguineous material from time to time.

The feather excited no cough, but annoyed the child by embarrassing the respiration, and brought up considerable quantities of brownish, shreddy, and mucous matter, which, under the microscope, exhibited mucus, pus, and epithelial bodies embedded in a viscid, slightly opaque, and striated substance.

The child fell asleep, and was left under observation. In the course of the night I was informed of an increasing dyspnœa, which was relieved by more care in clearing the tube.

Dec. 3.—Early in the morning I received word that suffocative symptoms had suddenly set in. Having in mind that I had once lost a promising case by complete occlusion of inner tube, which the attendant had not courage to pull out, I hastened to the scene of danger.

Unfortunately, the only one of the tubes present at the time of the operation, which was of suitable size, happened to be a single one which, of course, the attendants must clear *in situ*. After substituting an appropriate double one, it was discovered that the obstruction was indeed a plug of brownish glutinous material. Brandy and beef-tea could now be taken. The child walked about the floor, appearing quite comfortable; but auscultation discovered râles in the larger bronchial tubes, and, although there was no dyspnœa, the respirations were shallow, 40 per minute, and the pulse 120.

The feather brought up considerable fragmentary material which exhibited, in addition to the appearances last mentioned, a great many slow-moving vibriones. The sulpho-carbolate solution was applied by the feather in the bronchi.

By this time there was emphysema of the neck and upper part of the breast, extending to the axillæ. (See Dr. Graham Weir's case in London *Lancet*, Am. Edit., Dec. 1869, p. 654.)

The solution became inoperative; the feather neither excited cough nor brought up considerable portions of exudation, nor was its presence in the bronchi resented except as it interfered with the passage of the diminishing current of air. Respiration became more laborious, while auscultation discovered good respiratory sounds every where excepting in the larger tubes at the root of the lungs.

By Dr. Jacobi's advice I substituted lactic acid (Weber) for the sulpho-carbolate solution, having previously ascertained its positive solvent action upon the extracted fragment of exudation. For a time there was a little improvement; the feather was more useful; respiration was easier; the child took its brandy and beef-tea, walked a little on the bed or sat on its mother's arm, and seemed happier. As the evening set in, all the symptoms took a desperate turn; so by 8 P. M. dyspnœa was violent, face dusky, countenance anxious, lips purple, eyes glazed, pulse 160, small and wavering, respirations 55—60, inspiration short but labored, expiration prolonged and noisy. Vesicular respiration every where pretty distinct; a few moist râles and harsh sounds in the larger tubes. Percussion sounds good.

The bronchi, to the reach of a long feather, perfectly insensible, and I could gather but a few dryish fragments of the exudation, and these were afterwards found to swarm with vibriones. A teaspoonful of the lactic acid solution, poured through the tube, bubbled forth again with the next expiration.

Emphysema had extended to spine.

Death in five hours, preceded by semi-coma and muscular resolution.

One remark: the emphysema was inconsiderable, entirely subcutaneous, and could have done no mischief (even if the repeated physical examination had not demonstrated its probable absence from the thoracic cavity), for the tracheotomy tube offered a manifold larger entrance than the minute prick of the mediastinal tissue.—*N. Y. Med. Rec.*

MEDICAL INTELLIGENCE.

(General Orders by the Governor in Council.)

Pensions—Warrant Officers.

Medical Warrant Officers will only receive the scale of pension for the next lower grade, if they have not served three years in the grade from which they are pensioned, and if they have served less than fifteen years, their claim to any pension will be specially considered.—(G. O. G. G. No. 598 of 1870.)

Furlough Regulations of 1868.

The 17th June 1870.

No. 627 of 1870.—In explanation of Rule XIII. of the Furlough Regulations of 1868, published in G. G. O. No. 1064* of the 10th Nov. 1868, it is hereby notified that an Officer who has any balance of furlough due to him, although he may not have served three years from date of last return to duty, will, on obtaining furlough on medical certificate, be entitled to receive half the Indian pay of his rank for the entire period not exceeding two years, but will forfeit any appointment he may be holding, as already laid down in the Rule above referred to. Such furlough may be extended to a third year on English furlough pay.

2. It is further notified, with reference to Rule XIV., that it is intended that an Officer who has not any balance of furlough to his credit, but who has served three years from date of last return to duty, should, on obtaining furlough on medical certificate, receive the prescribed 50 per cent. of his emoluments and retain his appointment.

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* Madras G. G. O. 1st December 1868, No. 434.

Furlough Allowances.—Medical Officers.

G. O. G. No. 200 of 28th June 1870.—The following extracts from Notifications in the *Gazette of India* are republished :—

Financial Department, Leave and Allowances.
The 17th June 1869.

The Governor-General in Council is pleased to give retrospective effect from the 1st July 1868, to the Resolution No. 1226,* passed in this Department on the 17th June 1869, and quoted in the margin, and to rule that the words "unemployed pay" in that Resolution shall, in the case of Officers who were in the Medical Service prior to the 7th November 1864, be understood to mean the "full batta" pay prescribed in the 10th paragraph of the General Order of the Government of India in the Military Department, No. 507, dated the 20th June 1864.

"In cases in which the furlough allowance of a Medical Officer in Civil employ, calculated according to Rule V. of the Military Leave Rules, on the average salary drawn by him for three years prior to his proceeding on furlough does not equal half of his unemployed pay, the difference shall be added to the furlough allowance."

2. His Excellency in Council is also pleased to rule that a Commissioned Medical Officer officiating in one of the civil appointments the salaries of which were fixed in the General Order of the Government of India in the Military Department, No. 370, dated the 4th April 1867, is entitled, whether he was in the Medical Service prior to the 7th November 1864 or not, to the "unemployed pay" of his rank according to the scale prescribed in the General Order of the Government of India in the Military Department, No. 1060, dated the 23rd December 1864, and half the difference between that pay and the salary of the appointment in which he is officiating: provided that if he were appointed to the Medical Service before the 7th November 1864, his aggregate allowances shall not be reduced below the "full batta" pay of his rank according to the scale published in the 10th paragraph of the General Orders of the Government of India in the Military Department, No. 507, dated the 20th June 1864.

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* Madras G. O. O. 6th July 1869, No. 243.

Dress—Officers—Indian Medical Department.

G. O. G. No. 209 of 9th July 1870.—The following General Orders by the Government of India are republished:—

Under instructions from Her Majesty's Secretary of State for India, the provisions of G. G. O. No. 1245,* dated 15th December 1869, regarding the dress of officers of the Indian Medical Service, will, for the present and until further orders, be held in abeyance.—(G. O. G. G. No. 636 of 1870.)

* Madras G. O. G. No. 423, dated 28th Dec. 1869.

Leave to join Appointments.

Financial Department, Leave and Allowances.
The 29th June 1870.

No. 1803—The Governor General in Council is pleased to lay down the following rule for calculating the time to be allowed to Covenanted Civil Servants, Military Officers in civil employ, Chaplains, and Uncovenanted Servants for joining a new appointment:—

The joining time to be allowed to an Officer transferred from one station to another shall be seven days, and in addition thereto, one day (exclusive of Sundays) for every hundred miles traversed by Railway or Steamer, or the time actually occupied in the voyage by Steamer if it exceed the time calculated at one day per hundred miles, and one day exclusive of Sundays for every ten miles of the remainder of the distance between the two stations, provided that the whole time does not exceed three months, and that it is spent *bonâ fide* in progress from one station to the other.

2. These orders do not affect the provisions in the Leave Rules relating to subsidiary or preparatory leave.

Madras Medical Fund.

Retirements.

Deputy Inspr.-Genl. J. A. Reynolds, from 4th Aug. 1870.

Deaths.

Annuitants.

Mr. W. Burrell, on 19th May 1870.
Mr. John Brown, on 7th August 1870.

Pensioner.

Mrs. E. Anderson, on 27th June 1870.

List of Wives

On account of whom Payments have been notified (by the receipt of Paymaster's Statements, &c.) from 21st June up to 28th October 1870, for securing the following rates of Pension.

Subscribers' Names.	Date of Marriage.	Rates of Pension secured.	Payments how made.
J. Keess.....	24th May 1854.....	* One fourth.	By Donation.
H. Adam.....	4th November 1856,..	* One third.....	
J. T. Williams..... ...	24th August 1870.....	Full.....	

N. B.—The rates of Pension marked thus * are additional to those previously secured.

List of Children

On account of whom Payments have been notified (by the receipt of Paymaster's Statements, &c.) from 21st June up to 28th October 1870, for securing the following rates of Pension.

Subscribers' Names	Children's dates of birth.	Sex.	Rate of Pension secured.	To what period.	Payments how made.
E. E. Lloyd	27th June 1870...	Female...	Full ...	To 21 years.....	By Donation.
W. Farquhar.....	22nd Mar. 1861...	Do. ...	do. ...	* From 21 to D. or M., &c.	
Do.	27th July 1862...	Do. ...	do. ...	* Do. ...	
Do.	24th July 1864...	Male ...	do. ...	* From 18 to 21 years ...	
G. F. Trimnell....	7th Feb. 1860...	Female....	do. ...	* From 21 to D. or M., &c.	
Do.	10th June 1868...	Do. ...	do. ...	* Do. ...	
H. E. Busteed.....	17th Sept. 1870...	Male ...	do. ...	To 21 years.....	
W. H. Morgan....	16th May 1868...	Female....	* Half ...	Do.	
Do.	29th June 1870...	Male. ...	2/3rds ...	To 18 years.....	By Donation & Subscription.
T. Beaumont.....	4th Mar. 1870...	Female....	Full ...	To 21 years.....	
W. Fry.....	4th April 1870...	Male ...	do. ...	To 18 years.....	

N. B.—The rates of Pension marked thus * are additional to those previously secured.

Intimation has been received of the marriages of the undermentioned ladies, absolute pensioners on the Fund.

Miss Magdalene Thompson, daughter of the late Surgeon W. B. Thompson, on the 24th May 1870, to William T. Toole, Esq.

Miss Mary Martha Rogers, daughter of the late Surgeon S. Rogers, on the 7th July 1870, to William Arthur Mumford, Esq.

The undermentioned lady has been admitted as absolute pensioner on the Fund.

Mrs. Adelaide Burrell, widow of the late Mr. W. Burrell, Annuitant, with 3 daughters and 3 sons, from 19th May 1870.

MEDICAL FUND OFFICE,
FORT ST. GEORGE,
28th October 1870.

BOOKS, &c. RECEIVED.

Dr. Halford's Treatment of Snake-bite.

Journal of Cutaneous Medicine, *September*.

Journal des Connaissances Médicales, *to September* 10.

Indian Medical Gazette, *October*.

Gazette Médicale D'Orient, *July and August*.

The Secretary Madras Branch of ROYAL MEDICAL BENEVOLENT FUND SOCIETY OF IRELAND *acknowledges with many thanks receipt of the following Subscription for* 1870-71.

Dr. Price ... ...Rs. 20.

THE MADRAS

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ORIGINAL ESSAYS.

ART. XXXII.—*Some practical Notes on the Ascaris Lumbricoides.* By Surgeon M. C. FURNELL, F.R.C.S., (Exd.) Officiating Ophthalmic Surgeon General Hospital, and Professor of Physiology Madras Medical College.

THE presence of the Ascaris Lumbricoides, or in plain English, worms, is the source in this country, especially on the western coast, of many varied and obscure complaints.

In the *Madras Monthly Journal of Medical Science* for October, in a Review of "Dobell's Reports on the Progress of Medicine," allusion is made to the Echinococci which infest the inhabitants of Iceland. This recalled forcibly to my mind some notes I had prepared on the Ascaris Lumbricoides for this journal previous to my departure for England. These notes have been mislaid, but I propose now to replace them.

The western coast of India, the Malabar District, is perhaps as much infested with lumbrici as Iceland appears to be with echinococci. Almost every woman and child, especially among the poorer classes, is or has been infested with these pests. They kill, I am confident, from wasting diarrhœa, dysentery, and other causes, numbers yearly.

Except to a person who has served on that coast, it would seem almost incredible how frequently and how severely people may suffer from these parasites; how obscure often are the symptoms, and how adults, not excepting Europeans, may have been ill for months, and even sent to Europe on medical certificate, and all the time a few wretched worms have been the cause of all their sufferings. The following cases, chosen from a great number, will best illustrate my statements; and it is in the hope that being read by some medical officers, especially junior men serving for the first time in Malabar, they may be of service, that I am induced to publish them. I may premise that I did duty on that coast for six years, at different periods.

CASE 1.—A young officer, a friend of mine, not a patient, was sent home from Cannanore in 1858, for persistent diarrhœa, which defied all treatment. He was a young man, and the diarrhœa had so weakened him, it was decided, and very wisely, that he should be sent to Europe.

He consulted some physicians in England, and of course his liver was declared "out of order," and he was treated accordingly. He derived a certain amount of benefit from his trip home, but could never quite shake off his diarrhœa. On his way out, he had for fellow-passenger a Bombay officer, who in earlier years had been a medical student. This Bombay officer, when he had heard the history of his Madras friend, was very positive he suffered from worms; the Madras officer indignantly rebutted the idea; it became the subject of a bet, and to decide it, the Madras officer consented to take a vermifuge. He expelled several, and of course the Bombay officer proved correct. My friend, who related this to me, informed me that from that time he became perfectly well, losing his diarrhœa, and feeling of weakness and inability to exert himself, which had been prominent features of his previous illness. When I saw him, some time after the above occurrence, he was a strong hearty man. I have given the above case, although not in my own immediate practice, to bear out my statement that "adult Europeans may be treated for months, and even sent home to Europe," where, perhaps, all the time it is only a few worms causing all the trouble.

In 1856-7, I was stationed at Malliaporam, Malabar coast, doing duty with H. M.'s 74th Highlanders, and I remember that persistent diarrhœa and dysentery were very

frequent amongst the men. I was not aware then how frequently lumbrici are the cause of diarrhœa and even dysentery.

Case 2.—In 1861, when I was Civil Surgeon of Tellicherry, a lady came under my charge, shortly after her marriage, suffering from diarrhœa, and subsequently a dysenteric diarrhœa. During her illness, she had a well marked attack of peritonitis, which very nearly carried her off, and caused me and her friends great anxiety. When she recovered from the peritonitis, the diarrhœa still persisted, sometimes better, sometimes worse, for many weeks; occasionally it had all the characteristics of dysentery, scanty, bloody, slimy motions, &c. It seemed to defy the usual treatment for such a malady; the lady was seen by other medical officers beside myself, amongst others Dr. Shaw, our late Principal, and Dr. Reynolds; and it was at last agreed that all treatment having failed, and the lady's health having much deteriorated, she must be sent home. This was to her husband, financially, an almost ruinous step, and it was postponed as long as possible. One morning, shortly after proceeding to Europe had been quite decided upon, and correspondence about a passage entered into, the lady passed a lumbricus, and drew my attention to it. A couple of doses of santonine, followed by some castor oil, expelled three more, and from that time she became rapidly—marvellously so—well, and has remained so ever since. It is needless to say the visit to Europe, and its terrible expense, was altogether abandoned. This was the first case that drew my attention to the connection possibly existing between these cases of lingering persisting diarrhœa in adults and lumbrici.

Now, as to the peritonitis in this case—Were the worms answerable for that? I think so from the following strange Case No. 3. I have never known a case of death in the human subject from perforation of the intestine by a worm, but I have known death caused by a worm causing complete obstruction and enteritis. I will allude to this further on.

Case 3.—Death from peritonitis in a horse, from perforation of the intestine by a worm.

Some time in 1856, when I was stationed at Malliaporam, I paid a visit to Calicut, and was a guest of the Honorable W. Holloway, then Sub-Judge of Calicut. One evening after our drive, the coachman announced that one of the

horses was sick. I was asked if I could afford any assistance, and I immediately tendered the whole of my (then) veterinary lore on the subject, which was this.* The horse was suffering either from colic, or inflammation of the bowels; if the one, then a bottle of hot beer with some chillies, and the animal to be trotted about, was the correct treatment. If the other, bleeding, physic, &c. Of the one, viz. the hot beer treatment, I professed myself a master; of the bleeding, &c., I was incompetent; so it was agreed to give the poor horse chance of what we did know. The beer was administered, and he was trotted about, and, *mirabile dictu*, became much better, and we retired somewhat triumphant. Next morning, however, the coachman appeared with a lugubrious face, and announced that the horse was dead!

It was determined to learn what we could from the matter, and a post-mortem was ordered. It was discovered that a lumbricus had perforated the stomach, and half the worm was in the stomach and half in the peritoneal cavity; all the parts around were terribly inflamed. There was nothing else to account for his death, and perhaps this was enough.

Now, if a lumbricus could perforate a horse's intestine, why not a human? Indeed, although I have never seen it, I have been informed by a physician practising on the western coast, that he once found in a girl, upon whom a post mortem examination was made, the duodenum perforated by a lumbricus, which had also made its way into the liver; but I have known a lumbricus cause death in the following manner:—

CASE 4.—A man was admitted into the St. Bartholomew Hospital, Ootacamund, when I was in charge, *with obstinate constipation*, ending in stercoraceous vomiting and death. Before the man's death, great pain on pressure existed over the right inguinal region. On post-mortem, the termination of the ilium was found much inflamed and apparently strangled, the commencing colon was likewise congested. On opening the intestines, a lumbricus was found in the small intestine, a small portion having made its way into the large bowel: the stoppage seemed complete, appa-

* Some knowledge of veterinary skill would be of immense use to medical men up country. Many valuable animals are lost from there being no one who possesses even the simplest knowledge of the matter.

rently more from spasmodic contraction, and yet difficult to account for. No other cause of death could be discovered. In no other part was the intestine obstructed. There was no twisting or intus-susceptio.

Case 5.—A gentleman, usually resident in Madras, became my patient for some trifling ailment during a temporary visit to Cochin. I mention the fact of his visiting Cochin, to shew the apparent connection between the lumbrici and the western coast. More than a year afterwards the gentleman came to Ootacamund, when I was medical officer of that station, and again consulted me, this time for a diarrhœa. He had, according to his statement, been sent up for change of air from Madras for this very diarrhœa. I was on the point of informing him that the Hills were about the worst possible place for his malady, when my attention was arrested by his remarking, "I have had this diarrhœa off and on for now about a year, almost ever since I came back from the western coast." It immediately struck me I saw my way to solving his difficulties. I ordered him santonine; he expelled several lumbrici to his intense astonishment and disgust, but recovered at once, and returned to Madras very much benefited by the "change of air."

Case 6.—While resident at Ootacamund, the following very strange case came under my notice. A small Burgher lad, aged about 12, was sent to the hospital by one of the German Missionaries, for the following reasons:—He was unable to retain his urine, which every few minutes was voided, and with considerable pain. So great was the pain, that the boy moaned and cried each time he micturated, and stood in a strange way on one leg, pressing the heel of the other foot firmly into the perinæum. Moreover, he pulled the prepuce forward with his hand, until it had become quite elongated. He had suffered in this way, we were told, for months, and was miserably worn and thin; indeed, a piteous object. My first impression was that he was the victim of calculus, and he was accordingly put under chloroform and a sound passed. I could find no stone, even after a careful search; but fancying that perhaps this arose from the bladder being empty, and that the stone was hidden in a pouch or recess, he was ordered to bed for a further examination the next day. As he was leaving the room, I learned incidentally that his bowels were much

relaxed, and this induced me to order some santonine and Dover's powder, to be followed by a dose of oil. He passed a large quantity of worms, almost a small chatty full, and strange to say, not only was his diarrhœa cured, but the whole train of symptoms referable to the bladder passed away too. The incontinence of urine entirely disappeared. I again sounded him, for curiosity's sake, but his bladder had no stone. I presume, in this case, the whole symptoms were due to reflex action from the presence of these parasites in the rectum.

These worms will attack children of so tender an age, that it becomes somewhat puzzling to account for their presence. The children of the very poor are infested with them whilst still at the breast, and only a few months old. I have witnessed this over and over again at the Cochin Civil Dispensary, and the carelessness in matters dietary, entailed by great poverty, may in some measure account for it; but the following case, occurring in a child of well-to-do European parents, not only illustrates well the terrible effects of a single parasite in a child, but proves that even well guarded and well nursed children are not exempt.

CASE 7.—A lady arrived one day at Cochin on her way to Madras from Travancore. She was going to Madras to seek a passage to England for the sake of her child, who was wasted to a skeleton from an obstinate dysenteric diarrhœa, which nothing could check. I forget the exact age of the child, but it was still being nursed by an amah. The lady was to remain a day or two at Cochin for the steamer to Beypore, and I was asked to see the child whilst it remained. From constantly seeing these cases, I immediately arrived at the conclusion that the child had worms, an opinion, however, I did not communicate to the mother. I ordered two santonine powders, one to be given each night. The next morning, *i. e.*, the morning after the first powder, I was shewn *one* large lumbricus, which I was informed the child had expelled during the night, a few hours after the first powder. It rapidly recovered, and the mother, finding her child restored to health, returned to her station, and postponed for the time her journey to England.

I mention in this case that I did *not* communicate the opinion I entertained to the mother, and I think on these occasions it is as well not to; for not only is there the risk

that it may not be worms after all, (for I am far from contending all cases of obstinate diarrhœa in children arise from that cause,) but some mothers become positively offended at such a suggestion, and will not give the remedy. Even to grown up people the idea is abhorrent, and sometimes offensive.

CASE 8.—Only the other day, since my return from England, I was asked by one of my old patients to see her son, a lad above twelve years of age. This was the history. He had been sick with dysentery for the last two or three months, and quite lately, a week or ten days before I saw him, the malady had assumed such serious proportions that the Apothecary in attendance had been obliged to call in a medical officer, to whose prompt and efficient remedies the patient most probably was indebted for his life. I was informed that the hæmorrhage on this occasion was so great, that it was scarcely believed he could have survived the night. He recovered from the graver symptoms, but still the diarrhœa, with occasional hæmorrhage and dysenteric stools persisted, and when I saw the lad, he was worn to a skeleton. The mother was in great grief about the state of her son, being fully persuaded she would lose him, and indeed, considering the wasted and emaciated appearance of the youth, and the long time his malady had persisted, she was not without grounds for her anxiety. All sorts of remedies, it is needless to say, had been tried in turn, and when I saw him, he was taking some powders, containing amongst other things Hyd. $\bar{c}$. cret., for from the chalky appearance of the evacuation, it was supposed, *inter alia*, that his liver was out of order. I mention this, because a chalky pultaceous appearance of the evacuation, is from my experience a very frequent concomitant of these cases.

I was quite prepared for the incredulous smile with which the Apothecary, a man of great experience and skill, met my suggestion, that lumbrici were at the bottom of the whole mischief. I was the more convinced, however, that this was the case, when I elicited from the parent that her son had been only a fortnight or so before the commencement of his sickness, on a visit to Cochin, his native place. I ordered some santonine, and with this effect: the patient passed *one* worm, the diarrhœa and hæmorrhage immediately left him, from the very day indeed on which he passed it; he recovered immediately his appetite and spirits, and is

now quite well again, and able to resume his studies at the Doveton College.

It would be, perhaps, needless for me to quote any more cases to shew the varied and grave symptoms which may arise from the presence of these parasites, but I have been quite lately, since I have been in charge of the Eye Infirmary, more than ever convinced of the protean forms of departure from healthy action, the presence of these parasites may give rise to.

CASE 9.—A little girl, Æt. 6, presented herself the other day at the out-patient room, with ptosis of the left eye; it was quite recent, and no cause could be assigned for its occurrence. I prescribed some santonine and Dover's powder, to be followed by oil, and the child expelled two or three worms, and the ptosis was gone. Now if we turn to any of the admirable modern manuals on diseases of the eye—Macnamara, Wharton Jones, Soelberg Wells, Power, &c., we find no mention whatever, or even a hint of lumbrici as an exciting cause of ptosis, and it is difficult to see what possible connection a lumbricus in the intestine can have with a branch of the third nerve; and yet we are driven to the conclusion, that in this case some connection existed, some remote reflex action through the sympathetic system.

I have perhaps quoted enough cases to prove my postulate "that the presence of worms in the intestines is the source of some of the most obscure and varied complaints." I can only further record my experience here, that whenever I have had under my charge any malady, the cause of which has been more than ordinarily obscure and baffled my ingenuity, I have often found a marvellously easy solution of the question in a couple of doses of santonine followed by castor oil. I have cited enough cases too, I hope, to prove that these wretched parasites spare neither the old nor the very young, the strong and apparently robust, more than the feeble; and that all classes, whether the poor and insufficiently fed, or the well nursed and well nurtured, are alike liable to their pestiferous presence. The poor in this country,as in all others, both from their numbers and their poverty, present the most numerous victims; but one reason, I believe, why they suffer more than their wealthier countrymen is, from their inability to purchase the betel leaf and areca nut, which I presume is the great and

natural anthelmintic, if I may use the word, of this country.

There are one or two practical points, perhaps, worth further notice. One is, that in these cases one almost invariably finds the poor liver has been blamed, and consequently (mal) treated; and this arises from the motions often having a frothy, white, pultaceous appearance. This appearance is so frequent, that to my mind it is almost pathognomonic, and still more so if one observes on the top, passed after as it were, and not mixed with the rest of the motion, a small quantity of blood, with or without mucus.

Another point worth observing is that very often, although some lumbrici may have been passed, more remain, and it is as well always to give, at a distance of a few days, another dose of the anthelmintic. From my experience in children they generally occur in pairs, though very often, as in Case 7, one is enough to cause all the mischief.

The rapidity with which people recover from the gravest symptoms, is also very striking; this was well shewn in Cases 2, 6, 7, 8.

The doses of santonine I give may be considered small, but I generally find them sufficient. My plan is with an adult, to prescribe two grains and a half with a little sugar, each night at bed-time for two nights, and a dose of oil on the morning following the last dose. With children, I find half a grain, or grain, to a grain and a half, according to age, amply sufficient; and I always prescribe two powders followed by oil as in the adult.

NOTE.—Since the above notes were written, I see in the *Madras Monthly Journal* for November, a case of "Cerebral symptoms simulating meningitis caused by ascarides," which adds force to my observations.

ART. XXXIII.—*A Case of Traumatic Semi-paraplegia.* By W. MACRAE, Esq., M. B., Acting Surgeon Third District.

AT Shimogah, on the 6th June 1869, a Mussulman convict Æt. 25, was struck by his keeper about the lower end of the spine while bending over his work, and fell down insensible. Being carried to hospital, the Dresser found him semi-comatose, with slow stertorous breathing, slow weak pulse, and pupils somewhat dilated. He was very restless, and would take no notice of anything said to him. He gave him a turpentine and castor-oil enema, and as he was able to swallow, in about an hour he gave him a dose of calomel.

17*th*.—I first saw him this morning. He could answer questions in a dull stupid sort of way. His pulse was about 50, full and steady, breathing quiet, skin natural, tongue clean. He lay on his left side, with his legs semi-flexed. He complained of great pain in the lower part of the back, chiefly towards the right side, and said he was not able to sleep the previous night from this cause. He could move both legs a little, but with evident pain, and the gentlest handling of his pelvis could hardly be endured.

Ordered a large blister to be applied over the lumbar vertebræ, the raw surface to be afterwards dressed with belladonna ointment.

℞ Tincturæ Ergotæ, ♏ x.
Potassii Iodidi, gr. v,
Aquæ, ℥ i. *ter die.*
A grain of Opium at bed-time.

18*th*.—Being clearer-headed this morning, and not so sensitive to handling, a careful examination was made. The right lower limb was found to be quite insensible to touch, heat, tickling, and pain (tested by pricking with a needle). Its temperature was slightly lower than that of the left, as indicated both by hand and thermometer; voluntary motion was almost entirely wanting. The anæsthesia extended up over the crest of the ilium, being bounded by a line running from a little below the twelfth dorsal vertebra, round the right side to a point about half-way between the umbi-

licus and spine of pubes. It also included the skin over the entire pubic region, the left pyriformis muscle, the whole of the penis and scrotum, and both sides of the anus. Hard squeezing of both testicles was not felt. The man being naturally obtuse, any nice distinctions, such as a margin of partial anæsthesia, could not be satisfactorily made out.

He could move the left leg pretty freely. There was marked hyperæsthesia of its entire surface; a touch caused starting, a prick elicited a cry of pain, its temperature was higher than that of the right, and a moderately heated piece of metal was intolerable.

The general symptoms were favorable. He was not stinted in food, and the mixture was continued. To be kept perfectly quiet.

28*th.*—At this date, he could move his left leg quite freely, but the right one hardly at all, and it pained him to try. There was still slight hyperæsthesia of the left limb while the right continued quite anæsthetic. The ergot was now omitted, and the iodidi of potassium gone on with. The right leg was daily rubbed with soap liniment.

30*th.*—Voluntary movement increasing in right leg. Has a little blunted feeling in the skin above the ilium and over pubic region.

July 2nd.—Sense of feeling returned down as far as the knee, but he could not feel a needle passed into the skin at the ankle.

6*th.*—Has feeling half-way down the leg.

10*th.*—Feeling returned down as far as the ankle.

15*th.*—Can now flex and extend the limb pretty freely, and sensation is completely restored.

Remarks.—This case at first sight appears inconsistent with Brown-Séquard's theory of paralysis and hyperæsthesia being always found on the same side as the lesion of the cord, and intact voluntary power with anæsthesia on the opposite side. But it is not so in reality. The lesion, whatever it was, may be presumed to have been located in the right side of the lower end of the lumbar enlargement of the cord, just where the cauda equina is given off; and at this spot both the sensory and motor nerves of the

right lower extremity are collected, so that paralysis of the one set, would also involve paralysis of the other. I think that a small extravasation of blood at this spot, with consequent temporary congestion from irritation on the left side, would account for all the symptoms noted in the case.

ART. XXXIV.—*Memorandum on the Saline Treatment of Cholera.* By E. NICHOLSON, Esq., F. C. S., Assistant Surgeon, R. A.

(Communicated by the Inspector General Indian Medical Department.)

As soon as unequivocal choleraic symptoms are manifested, I cease the administration of opiates, astringents, etc., and adopt the following treatment :—

Administer ten grains of common salt (Chloride of Sodium) and ten grains of phosphate of soda, dissolved in an ounce of water, every half-hour, until collapse ceases. Any dose rejected is repeated every quarter of an hour until retained by the stomach. When reaction sets in, I give the medicine every hour; and when it is complete, I substitute two ounces of broth, made with extractum carnis, as a vehicle for the salts, giving them at two hours' intervals. I continue this treatment through the secondary fever; any renal or hepatic complication at this stage is best met with counter-irritants, or other external applications. During the collapse but little external aid, in the way of frictions, &c. is necessary.

In this saline treatment, I find advantages which, from my observation of the course of cholera when treated by external means only, I can only ascribe to the effects of the treatment.

First—Its successful results.

I have, in the course of my Indian experience, at Kamptee in 1865 and 1868, at Madras in 1866, at Rangoon in 1870, treated cholera on three systems :— 1, The current routine of meeting symptoms by opiates and astringents at the outset; stimulants, champagne, ice, &c. during collapse, with calomel occasionally; vigorous external means of promoting reaction being employed. 2, Using external applications, blisters, frictions, heat &c. externally neither medicine, nor food, nor

drink of any description being given internally; enemata of beef-tea being given on the second and third day. 3, The saline treatment now described. The results have been as follows:—

	Europeans.		Natives.	
	Cases.	Deaths.	Cases.	Deaths.
1st.—Routine treatment...	4	4 (all within 12 hours.)	numerous about 30.	about ¾ of cases.
2nd.—External treatment only.....	3	1 (on 3d day)	2	2 (on 3d day)
3rd.—Saline treatment....	3	...	2	1 (on 3d day)

Secondly—Its mitigatory effects on the course of the disease.

1st. The thirst is greatly diminished. Instead of the intense craving for drink, there is a much more moderate thirst, so controllable that the patient readily obeys the injunction not to swallow the water allowed him occasionally for the purpose of washing his mouth. I allow no drink.

2nd. The vomiting generally ceases after about three doses of the salts; and the purging does not continue long.

3rd. The cramps are greatly diminished, being readily relieved by moderate shampooing; instead of, as usual, tiring out several men in efforts to relieve them.

4th. The collapse does not become as intense as is usual; and though the extremities be cold, the temperature in the axilla does not fall more than two degrees; hot bricks, &c., are scarcely required.

5th. The biliary and urinary secretions were re-established earlier than in the cases treated without medicine. In the native who died, an old man, uræmia was the immediate cause of death.

Thirdly—Its simplicity.

Twenty patients might be treated in this way with less trouble than is found now with one or two patients surrounded by attendants endeavouring, too often in vain, to produce reaction. The medicines are cheap and easy of distribution

to civil authorities. For issue in this manner, I think that well dried table salt, and coarsely powdered phosphate of soda (price 1 Rupee per lb), each in a capped bottle, with a small wooden spoon capable of holding ten grains, would be the best form of supply.

I may add in conclusion that this plan does not differ essentially from those of Dr. Stevens and Dr. O'Shaughnessy, used in 1832 and since, with great and acknowledged success, but now unfortunately forgotten, I believe, from being theoretically unsatisfactory. I have not had opportunity to experiment with one only of these salts at a time, but I am of opinion that to the common salt is due the principal remedial effect; if this view be correct, the remedy for cholera is within the immediate reach of every one.

ART. XXXV.—*Cases of Snake-bite continued.* By JOHN SHORTT, M.D., &c., Surgeon, Inspector General of Vaccination, Madras Presidency.

THE following cases of snake-bite have been since received, through the kindness of Dr. Mackenzie, C.B., C.S.I., Inspector General Indian Medical Department.

Assistant Surgeon Sargent, of the 5th Infantry Hyderabad Contingent, reports the following two cases:—

CASE 1.—Annasawmy, aged 18, maty boy. This case occurred in my own house one day in August 1869. I remember the month and hour, but have forgotten the day. At 9 P. M., I was told that the boy had been bitten by a snake, and he was brought from the cook-room to the house immediately. Although the distance was only forty yards, and the boy was brought at once, on being bitten, yet on arrival at the house, symptoms of poisoning had set in. He then was in a state similar to that of a person who had received a severe blow but had not quite fainted under it; he was just sensible enough to say he saw a small snake escaping, but that he felt so faint after being bitten, that he could not pursue it. There was a small wound at the outer side of the left ankle, such as might be made by a fine sharp pointed weapon, but he did not complain of any particular pain there.

I immediately scarified the wound, and gave Brandy ℥ii in which were Spirits of Ammonia ℥ii. The first dose did not have any visible effect upon him, and in twenty minutes after being bitten, nervous depression was so complete, that the head fell forward, all power over the limbs was lost, and a frothy mucus escaped involuntarily from the mouth. Brandy and strong ammonia were given from the first every ten minutes, and after each dose the boy was taken for a walk once up and down the verandah, supported by two men. This treatment was continued until about 10 o'clock, when he first began to show signs of coming round, by resisting the giving of the brandy and ammonia; the pulse had now also become stronger; the ammonia had irritated the mucous membrane of the throat, and each succeeding dose must have caused great smarting, and by its general action on the system and its local action upon the mucous membrane of the throat, I consider the ammonia saved this boy's life. It was remarked by all present, that after each struggle caused by the irritation of the medicine, although the boy again became depressed, yet the depression did not seem so complete as that from which he had been immediately aroused. The ammonia was decreased every dose, and the brandy more diluted; and by 11 o'clock, he was well enough to place one foot before another, when being led between the bearers for his usual once in ten minutes walk; at 12 o'clock he answered questions, and by 2 A. M. I allowed him to go to sleep. The next morning he was very stupid, but was suffering more from the effects of brandy and fright than from the poison of a snake. I have seen cases of poisoning by narcotics in which nervous depression, such as above occurred, was successfully treated, and in which part of the treatment consisted in the patient being continually obliged to use muscular action. It is reasonable to suppose that the more muscular action can be obtained, and the more the nervous system is excited, the less chance has a depressing poison of causing fatal results. It was fortunate in this case that treatment was commenced so early and before the system had been completely prostrated by the poison, for after a certain stage, from what I have seen and read, these cases are apparently hopeless. The snake was one of those called by some here the "Carpet Snake;" it was almost a foot and a half long, had a very handsome skin, the markings taking a diamond shape character, and the fangs about half an inch

long. Several were killed here last year, but I have seen none this.

CASE 2.—Reported by 3rd Class Hospital Assistant Kistnasawmy.

Private Bownajee, General No. 1068, No. 8 Company, aged 20, admitted 1 A. M. 24th September 1870.

When brought, he could neither speak nor see. I examined his body, and there was a little swelling above the right elbow, but I could not find any wound. After admission, he was given Spirits of Ammonia ℥xv., Brandy ℥iv., every 15 minutes; continued the medicine for an hour, after which Liq. Ammoniæ ℥ x. and the Brandy every 15 minutes. Beside the stimulants, hot-water bottles were applied to the whole surface of the body. Died in a comatose state at 4 A. M. Afterwards learnt that this man was bitten at 11 o'clock P. M. 23rd instant. Cause supposed to be a snake-bite, a man who had been sleeping near deceased stating that he felt something crawl over him, and very soon afterwards deceased complained of pain in the arm. No reason given for not bringing the man sooner to hospital, except that it was not thought he was so seriously injured until he became insensible; then, getting frightened, his friends brought him to hospital.

Cases of Snake-bite reported by Dr. Barter, Civil Assistant Surgeon, Seeonee.

NAMES.	Caste.	Occupation.	Sex.	Age.	Hour and date when bitten.	Native, English and technical name of the snake, and general description of the circumstances under which the bite occurred.	District, village or locality where bitten.	Symptoms.	Treatment, if any.	Date of Death.	Date of Recovery.	Number of minutes or hours ill.
1. Must. Dowla.	Gond.	Laborer.	F.	30	11th Sept. 1807 8 A.M.	Bit by a black cobra snake N. Tripudians (Nag) in the right foot whilst clearing the hedge.	Sereobee S. H. Lucknodown.	Insensible.	None.	...	11th Sept. 1870 12 A.M	4 hrs.
2. „ Kulia.	do	do	do	50	30th Sept. 1870 5 P.M.	Bit by a cobra snake N. Tripudians (Nag) on her left hand whilst cutting grass in the field.	Oomtee S. H. Lucknodown.	do	do	30th Sept. 1870 7 P.M.	...	2 hrs.
3. Bowsing...	Soonar	Jeweller.	M	30	29th Sept. 1870 4 P.M.	Bit by a cobra snake N. Tripudians (Nag) on his left leg when clearing wood in the jungle.	Markdown S. H. Lucknodown.	do	Treated by native doctor.	...	29th Sept. 1870 7 P.M.	3 hrs.
4. Must Mondree.	Gond.	Laborer.	F.	40	27th Aug. 1870 3 A.M.	Bit by a cobra snake N. Tripudians (Nag) whilst asleep.	Baydongree S. H. Keolaree.	do	None.	27th Aug. 1870 5 A.M.	...	2 hrs.
5. „ Gunnee.	Ooowarum.	Cultivator.	F.	8	21st Sept. 1870 3 P.M.	Bit by a cobra snake N. Tripudians (Nag) when playing in her house, on the left hand.	Pindrai S. H. Seonee.	do	do	21st Sept. 1870 6 P.M.	...	3 hrs.
6. „ Munglow.	Gond.	Laborer.	F.	30	25th Sept. 1870 12 AM	Bit by a cobra snake N. Tripudians (Nag) in the jungle when breaking firewood.	Myloe S. H. Seonee.	do	do	25th Sept. 1870 5 P.M.	...	5 hrs.

Art. XXXVI.—*Note on Bonduc Seeds.* By Surgeon Major G. Mackay, M. D.

The Pharmacopæia of India has been compiled on a very different principle from similar works, intended as standard codes of remedies, hitherto published. Instead of testing the value of each article and preparation, and excluding all found to be of no value, or doubtful efficacy, the principle held in view seems to have been, to give the names of all articles that have ever been alluded to as possessing or supposed to possess any medicinal action. In this way, the work has not only not added to our knowledge, but has actually retarded the introduction into general use of indigenous drugs of proved efficacy, as it is regarded as an authority, and contains some articles which many of the profession have no doubt long ago tested and found to be useless. The last number of the *Madras Medical Journal* contains a notice of the use of "Bonduc seeds," and it is to be hoped that the trial to be made of the oil extracted by Mr. Broughton, will settle the point as to their efficacy.

Within a few months of a quarter of a century ago, when stationed in Bundlecund with a Madras Cavalry Regiment, I found these seeds used as a remedy for fever by the natives there, and supplied to the Hospital of a Bengal Regiment in the same station. I applied to the Medical Board at Madras (then the presiding departmental authority) to sanction the seeds being supplied to Madras Regimental Hospitals. In reply, I was informed that the Members of the Board had for five and twenty years been fully aware that Bonduc seeds were used by the natives, in the manner and for the purpose I described; but they thought it quite unnecessary to sanction their being supplied for use in Military Hospitals. I consequently supplied myself, and gave them an extensive trial, using the powdered seed made up into a bolus with black pepper, the compound dignified in the Pharmacopæia of India as "Pulvis Bonducellæ compositus," and under the head of "therapeutic uses" said to be useful in intermittent fevers, "especially in those of the natives," a very safe remark to make with regard to any article, if the simple fact of the patient's recovery is regarded as sufficient proof.

In this country among natives, and even with Europeans

who have been any length of time in India, disease in general has a tendency to assume more or less of a periodic type, but an antiperiodic is not always necessary to effect a cure; and remedies, under which recoveries take place, are not necessarily antiperiodics. Natives are peculiarly susceptible of fever under the influence of sudden changes of temperature; marked variation of temperature between day and night, almost invariably produces fever in natives exposed to its influence. This was the case in Bundlecund, where the sun was powerful during the day, and the nights cold, the thermometer during the cold season of the year falling below freezing point at day-break. The fever, under such circumstances, usually assumes an intermittent type, and it was in these cases that Bonduc seeds were so generally used, and recovery attributed to them; but the fact is that such cases do not require an antiperiodic for their cure; an emetic or purgative, with rest, proper shelter, and after the fever has left, a vegetable bitter to restore the appetite, is all that is necessary.

Malarious fever was also frequently met with in Bundlecund. In these, as in all such cases, wherever contracted, an antiperiodic is required, and Bonduc seeds failed, quinine had to be resorted to, and I came to the conclusion that the members of the Medical Board were right in considering it unnecessary to sanction the issue of these seeds for use in Military Hospitals. The only good purpose they might have served was the saving of quinine, often used in cases such as those alluded to above, where it is really not required.

Financially, the use of indigenous drugs is not likely to effect a saving, for as the demand for these articles increases, so does their price. Chiræta is, I dare say, often used under the idea that being indigenous, it is inexpensive and easily procured. There is no difficulty in obtaining it or the "creyat," but it can actually be purchased in London at little more than one-half the rate it is supplied at in Madras, while Quassia and Gentian, imported from England, cost at Madras little more than a quarter of the price paid for Chiræta. The price of indigenous drugs varies in a remarkable manner in this country. Kino is sometimes procurable for eight annas a pound; at other times the price rises to two and a half rupees a pound: it is an article of export from this country, and sold in London at from one shilling and eight pence to two shillings a pound, according to the quantity purchased. These are facts for the political

economist to explain, but they are worthy of consideration by medical practitioners in India, when attempting to substitute indigenous for imported drugs, and render it the more advisable that care should be taken to use only those, the therapeutic action of which has been undoubtedly proved; those regarding which a doubt still exists, may prove dear at any price, when substituted for well tried and reliable medicines.

ART. XXXVII.—*Case of Snake-bite, with Observations.*

By Surgeon J. F. LOUGHEED, 2/21st Fusiliers.

ON reading in the last *Indian Medical Gazette* Dr. Fayrer's experiments on Mr. Higgins' gall cure for snake bite, which seems based on the old Irish formula "a hair of the dog that bit you," I fancied that the following case might interest your readers, if it was only to show how wrong conclusions may be drawn from apparently correct premises. At Kurrachee, in December last, when returning from Mess about 9 P. M., I heard my horse-keeper was bitten by a snake. I immediately went to the stables, and found a goodly company of sorrowing friends with a scattering of officers, who had also heard the report. I was told that about an hour before, as the horse-keeper was taking up an armful of hay, he felt himself bitten by a snake. He suddenly became faint, and when I saw him, he was stretched on the ground apparently lifeless, except occasional spasm of the jaws, teeth clenched, slight frothy appearance about the mouth, pulse moderately good. Every exertion was made by myself and the officers who were present to rouse him, but with no effect. Nearly an hour was spent thus, when an Assistant Apothecary arrived armed with the ammonia bottle and pocket case. He stated he had seen many cases of snake bite, but not one so severe as this. Under his advice, I scarified the bite freely, and saturated it with strong Liquor Ammoniæ; the patient showed no evidence of pain under this ordeal. The bite (two small well defined pin holes), surrounded by a well defined puffy margin extending about three lines in circumference, was found situated about two inches above the left patella. The idea of injecting ammonia suggested itself, but I did not do so, as I had no means or confidence

in the procedure. In the mean time, the poor man was gradually stiffening out, his pulse becoming smaller and smaller and beautifully less. Seeing now that nearly two hours had elapsed, and having given up the case as hopeless from the first, having no knowledge of snake bites, I started off for my friend Surgeon Major Styles, who lived close by. He kindly accompanied me. When I came back, I found there was considerable ground lost; he was stiffer than ever; neither heart nor lungs gave indications of life. A native doctor sat beside him compounding with the gravest of faces an infallible plaster of herbs, which I fortunately prevented him from applying until Dr. Styles had examined the poor man. You can fancy how much we were astonished, when after a few sharp blows over the ears with the palm of the hands, and the application of the ammonia bottle to the nose, the dead man gave symptoms of life, the doctor spoke to him sharply in his own language. After a little he was able to sit up with support; brandy was given, but only a few drops could be got down; he was then walked about supported by two strong men, and this, with half a dozen officers cheering and pouring brandy down his throat, completed the cure. I must say he remained an invalid for a month afterwards. Now let us see what deductions can be drawn from this case.

We have a man becoming cold, pulseless and stiff, travelling to the very verge of the grave in less than two hours. This man, before he became insensible, told his friends he was bitten by a snake, and showed them the bite on the left knee, which on examination was found to be two well defined deep pin-holes, surrounded with puffy margin. Could these marks have resulted from the bite of any other reptile, or could fright have caused all the symptoms above detailed? If so, I have no doubt the whole of the 50 snake-bite cures mentioned by Mr. Higgins, have received their reputation from being applied under similar circumtances. Had ammonia been injected in this case, its reputation would have been confirmed. Had Mr. Higgins' gall cure, with its 150 shakes of the bottle, or the Poonjee Priest's antidote been used, their infallibility would have been proved beyond doubt; and lastly, had the native doctor the good luck to apply his plaster, his fortune was made; but as neither of the vaunted remedies was used, I think I have shown how false deductions may be drawn from apparently correct premises.

ART. XXXVIII.—*Cases in Ophthalmic Practice.* By W. N. CHIPPERFIELD, Esq., Surgeon.

Congenital Deficiency of one Eye-ball.

A. B., a Hindoo female child, aged two years, was brought to the out-patient's room of the Madras Eye Infirmary in July 1870. Her father requested that something might be done to give her sight in the right eye.

The left eye was normal. The palpebræ of the right side were slightly puckered and sunken; presenting the appearance they would do had the globe been removed or shrunken from any cause. The palpebral fissure was only three-fifths the length of that of the left eye, and on separating the lids, it was found that the palpebral sinus was very small; the conjunctiva, which was congested and papillated, being almost immediately reflected from the inner margin of each lid. The lacus lachrymalis did not exist, and there was no caruncle, but the puncta were present and the canaliculi pervious. In the centre of the conjunctival surface exposed on separating the lids, there was a small, hard nodule, the size of a No. 3 shot, which was found to be the point of convergence and union of the anterior extremities of the ocular muscles. This nodule performed very slight consentaneous movements when the muscles of the left eye were brought into play. A soft, elastic, oval body could be felt to the upper and outer side of the central nodule; I supposed this to be the lachrymal gland, but the openings of its ducts could not be discovered.

The father stated that the child was born in this condition; that she had never had any discharge from, or affection of, that eye; nor did he ever notice that tears flowed from between the closed lids when the child wept. The nature of the case was explained to him, and with a very disappointed air he took the child away.

Anterior Staphyloma treated by Abscission.

CASE I.—C. G., a Eurasian girl, aged 15 years, was admitted into the Madras Eye Infirmary in June 1870. From an early age she suffered from inflammation of the eyes, and in one of the more severe attacks extensive

ulceration of the right cornea occurred. This was followed by staphyloma, which has very gradually increased.

Upon examination it was found that there was no perception of light in the right eye. The staphyloma was of a dark slate-grey colour, and implicated not only the entire corneal region, but also a great part of the upper and lateral ciliary region. The projection was not so considerable but that the lids could be made to completely close over it by a violent effort, but ordinarily this did not occur, for during sleep about one-half of the staphyloma was visible. The palpebral conjunctiva was congested, and the girl was troubled with a free mucous discharge and considerable lachrymation.

Taking into consideration the probability of the choroid being diseased, I recommended enucleation of the globe in preference to any other operation, but I could not obtain consent to this; all that I was permitted to do was to "take away the swollen, dark part." I therefore somewhat reluctantly performed Mr. Critchett's operation of Abscission, exactly as described by him in Vol. IV. *London Ophthalmic Hospital Reports,* and in the manner I have repeatedly seen it performed by that gentleman and some of his colleagues at the Hospital in Moorfields.

On tying the first suture it cut through the sclerotic coat which was softened. Another was inserted, and this and the other four sutures were drawn with only moderate tightness, as an unusually large segment of the globe had been removed. There was a little hæmorrhage; a cold pad was applied and the girl carried to bed.

Upon her recovery from the chloroform, some troublesome vomiting occurred, and the pad became saturated with blood. Iced compresses were applied. In the evening she was a little restless and complained of slight pain and tension in the stump, but there was no more hæmorrhage, merely a little sanious oozing.

The next morning there was considerable pyrexia; hot skin; quick, firm, but small pulse; and great thirst. The lids were red, shining and œdematous, and on separating them I perceived a small quantity of semi-coagulated blood. This was washed away by means of a gentle stream of water, and as there then appeared a dark blood-clot projecting between the edges of the wound, the sutures were immediately removed, and the clot picked out with forceps,

and I was satisfied at finding there was no hæmorrhage then going on. For three days there was smart fever with nocturnal delirium, and considerable erysipelatous inflammation of the lids, brow and cheek, but this subsided under the influence of a moderate allowance of wine with good broths and beef-tea. An abscess which formed at outer part of upper lid, was early opened and soon healed up. Slight suppurative inflammation occurred in the neighbourhood of the wound, but did not implicate the whole stump. Irrigation with warm water containing some permanganate of potash was practised thrice daily, and the child placed on tonic regimen.

In a fortnight all inflammatory symptoms had disappeared, the wound healed, and the patient was discharged very well satisfied with the result of the operation.

CASE II.—Balasoondrum, a Hindoo boy, aged 8 years. Admitted an out-patient of the Eye Infirmary in July 1870, with staphyloma of the cornea of the right eye. Neither the boy nor his mother could give any idea of the time when the staphyloma commenced, nor of its antecedent circumstances, beyond the fact that it was preceded by "eye pain."

The projection was the size of a child's thimble, and under no circumstances could it be concealed by the closure of the lids, although the latter were stretched and elongated. The base, which exactly corresponded to the sclero-corneal junction, was encircled by a shallow sulcus, and the surface in contact with the lids was rough and of a dirty brown colour. The constantly exposed portion was smooth and cuticular in appearance. There was constant epiphora excoriating the cheek. This arose, not from imperviousness, but simply from eversion of the puncta. The palpebral conjunctiva was very vascular, the papillæ being greatly enlarged, elongated, and of a deep red colour, giving a fungous appearance to the membrane. It was on account of this conjunctival affection that the child was brought to hospital.

I punctured the staphyloma with a broad needle, and although a considerable quantity of aqueous humour was let out, there was comparatively but little shrinking of the protrusion. Solution of Nitrate of Silver (40 grs. ad ℥ i) was applied to the swollen conjunctiva, and the child desired to attend every second day. For a month treatment was directed to the improvement of the condition of the mucous

membrane, but with very little effect; and as this condition so evidently depended upon the irritation produced and kept up by the staphyloma, I took the child into hospital and performed Mr. Critchett's operation. The boy took but a small quantity of chloroform, but it sickened him much, and he refused food for three days, when he became so weak I had to give him some stimulant. But locally everything went well; on the third morning I removed the sutures, and found the wound all but healed. In a short time his general health improved, and he was made an out-patient for the purpose of having the conjunctival condition remedied, which was soon effected.

The first of these cases is here related to show the danger of abscising a staphyloma when the ciliary region is implicated, or when there is probability of hæmorrhage from a diseased condition of the choroid. The second case is given merely as a contrast to the first.

Each of these patients had a freely moving stump well adapted for the support of a glass eye, but their circumstances did not permit of their indulging in such a luxury.

Fibro-cystic Tumour of the Orbit.

Allamalloo, female, Hindoo, aged 25 years, a resident of Conjeveram. Admitted into Hospital on the 30th July 1870, with very considerable exophthalmos on the left side. The lids are stretched over the protruded globe, and under ordinary contraction of the orbicularis, a large portion of the cornea remains uncovered; but by an effort, the edges of the lids can be brought into apposition. The globe is pushed outwards and downwards, and the cornea is on a plane $1\frac{1}{2}$ inch anterior, and 1 inch inferior, to that of the right eye. The palpebral conjunctiva is normal, the ocular portion of the membrane is injected, and at the superior retro-tarsal fold it is very loose and relaxed, and raised into cyst-like eminences. The cornea is finely puckered vertically, and its surface presents a minutely granular appearance. There is no perception of light. Above and behind the globe there is a tumour which is most prominent at the internal angular process of the frontal bone. Here it is soft and fluctuating, but more externally it has a firmer feel. It is apparently divided into two portions by the superior rectus muscle, which can be felt tightly stretched over it. The inferior rectus is less interfered with than the other ocular muscles, for the axis of the globe is directed downwards, outwards

and forwards, and the cornea can be still more depressed. Otherwise the motions of the globe are very restricted.

The patient, a well-formed, healthy young woman, states that the protrusion of the eye commenced four years since, that the growth was at first very gradual, but within the last six months the tumour has rapidly increased in size.

Ophthalmoscopic examination.—Owing to the granular and puckered condition of the cornea, a perfectly clear view of the fundus could not be obtained, and owing to the direction of the axis, and to the immobility of the globe, it was difficult to get a view of the optic disc. By a little management I gained the desired end. The retinal arteries were very much diminished in size, but the veins enlarged and varicose in places. The optic disc very much atrophied, of a dead white colour, and remarkably small. The choroidal vessels could not be seen on account of the density of the pigmentary layer.

Owing to the weather being very wet and unfavourable for the healing of wounds, I deferred operation for the present.

August 10th.—Dr. G. Smith saw the case, and recommended the removal of the tumour. I told him of the condition of the globe, but he advised an attempt to save it, not only for "cosmetic purposes," but to serve as a support to the lids.

26th.—The patient was placed recumbent and chloroform administered. An incision was carried from the outer canthus upward and outwards on to the temple, the upper lid everted and the flap raised. The conjunctiva and palpebral membrane were divided, and the surface of the sac reached. Upon exploring with the little finger, it was found that the tumour occupied the whole of the orbit, dipping down behind the globe and between the muscles in such a way as to render its removal impossible without sacrificing the useless eye. I therefore enucleated the globe, and then found that I could free the tumour from the walls of the orbit without the use of the scalpel, but that it was firmly attached at the apex of the cavity. The tumour was seized with a vulsellum and drawn forwards, when the sac burst and some clear fluid escaped, followed by a quantity of broken down fibrous tissue. The finger then detected that the tumour was firmly adherent to the margins of the sphenoidal fissure, from which it was separated by a stroke of the curved scissors. The lachrymal gland came away with the tumour.

The bleeding was slight and easily controlled by a stream of cold water. A piece of wetted cotton wool was passed into the cavity and a compress bandage applied. The edges of the incision from the outer canthus were brought together by sutures, and the patient carried to bed. Diet, milk with 2 pints broth.

Upon examining the tumour, the posterior two-thirds were found to be principally firm fibrous substance, with a few small cysts; the remainder consisted of opaque broken down tissue of a cerebriform appearance.

In the evening some sanious oozing occurred, the pad was removed, and there was no hæmorrhage. The cheek was a little œdematous, evidently from the pressure of the edge of the pad. A lighter compress was applied. She complained of much pain around the orbit.

℞ Tinct. Opii ♏ xxv.

Aquæ ℥iss ft. Haust: to be taken at bed-time.

As regards after-occurrences, there is very little to relate. There was some circumorbital pain for a few days with slight swelling of the lids. Very little suppuration occurred; the incision of the skin healed by the first intention. On the 31st there was slight purulent discharge, but she felt well and the cavity was filling up. On the 8th September, the parts were nearly healed, but owing to the great extension which the upper lid had previously undergone, its lower border completely overlapped the inferior lid. On the 11th, as she said she was quite well, and her friends were anxious that she should return to her home, she was discharged cured.

ART. XXXIX.—*On the alleged immunity from Cholera of workers in Gunpowder Factories.* By W. R. CORNISH, F.R.C.S., Sanitary Commissioner for Madras.

SOME time in the month of July last, when cholera was prevailing in the town of Madras, it was mentioned to me that persons whose duties led them to handle gunpowder,—or the several ingredients employed in its composition, were notoriously exempted from the ordinary epidemic diseases of the country, and especially from cholera. The belief in the preservative action of gunpowder is not confined to the operatives of the Madras factory. It is, according to Col. R. Cadell, R. A., an

accepted belief amongst the artizans in English factories also. In order to test the truth or otherwise of the theory, Col. R. Cadell, Superintendent of the powder factory, has obligingly caused the records of his establishment to be carefully searched for a period of twenty years, and the results are shown in the tabulated form below. The records of strength and deaths have been kept with great care, and except in a few instances where the causes of death were reported as "unknown," are thoroughly reliable. The total of deaths is strictly accurate. Although the statistical evidence does not fully support the view as to the immunity of the employés of the establishment from cholera, neither does it entirely disprove the alleged fact.

Mortality for 20 years Madras Gunpowder Factory.

TABLE I.

CLASSES OF DISEASE.			GENERAL DISEASES.					LOCAL DISEASES.						INJURIES.		
Orders of disease.			Sub-Division A.			Sub-Division B.		Nervous system.	Digestive system.		Generative system.	Cutaneous system.		Accidental.		No appreciable disease.
Years.	Average strength.	Total deaths.	Fevers.	Typhoid Fevers.	Cholera.	Phthisis.	Dropsy.	Diseases of the Brain.	Diarrhœa.	Dysentery.	Colic.	Disease of the generative system.	Child birth.	Carbuncle.	Killed by explosion.	Sudden death.	Unknown.
1850	124	6	...	...	1	..	..	..	1	..	...	...	...	...	3	...	1
1851	196	4	1	...	..	1	1	...	...	..	...	...	..	...	...	...	1
1852	197	2	...	..	..	...	...	...	..	..	...	1	...	...	...	..	..
1853	143	7	1	...	1	2	...	1	...	..	...	...	...	...	...	1	1
1854	117	6	...	...	3	1	...	...	..	...	...	...	...	...	..	..	2
1855	116	2	...	...	1	1	...	...	..	...	...	..	...	...	..	..	..
1856	116	2	..	...	...	...	...	...	..	..	...	...	...	...	...	1	1
1857	116	19	...	...	...	...	...	...	..	...	...	...	...	1	17	...	1
1858	193	1	...	...	1	1	...	...	...	..	...	...	...	..	...	...	...
1859	200	2	...	...	1	...	...	...	...	..	...	...	...	...	...	...	..
1860	200	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	..
1861	211	2	...	...	...	...	...	...	...	..	...	...	1	...	...	...	...
1862	214	3	1	...	1	1	...	...	...	...	1	...	...	...	...	...	...
1863	211	1	..	...	...	..	..	...	..	..	...	...	...	...	...	..	...
1864	193	1	...	...	...	..	...	...	...	...	..	...	..	...	1	...	...
1865	177	2	1	..	1	...	...	...	...	...	...	...	..	...	..	..	...
1866	173	3	2	...	1	...	...	...	...	..	...	...	...	...	...	...	..
1867	169	2	...	...	1	..	...	...	...	1	...	...	..	...	...	...	...
1868	163	2	...	...	...	...	...	...	...	1	...	...	...	...	...	..	...
1869	164	3	1	1	...	..	1	...	...	...	...	...	...	...	...	...	...
Total...	3393	70	7	1	12	8	2	1	1		1	1	2	1	21	2	8

Ratio per 1000 *of Strength.*

Classes of Disease.		General Diseases.					Local Diseases.							Injuries.		No appreciable disease.
Orders of disease.		Sub-Division A.			Sub-Division B.		Nervous system.	Digestive system.			Generative system.	Cutaneous system.		Accidental.		
Years.	Total deaths.	Fevers.	Typhoid Fevers.	Cholera.	Phthisis.	Dropsy.	Diseases of the Brain.	Diarrhœa.	Dysentery.	Colic.	Disease of the generative system.	Child birth.	Carbuncle.	Killed by explosion.	Sudden death.	Unknown.
1850	49·1	..	0·1	...	...	...	...	8·1	...	...	..	...	...	24·5	...	8·1
1851	20·4	5·1	...	..	5·1	5·1	...	...	..	...	..	....	...	...	...	5·1
1852	10·1	...	...	...	..	...	..	...	..	5·05	...	..	..	..	...	5·05
1853	48·9	6·9	..	6·9	13·9	...	6 9	...	...	...	0·2	..	..	...	6·9	6·9
1854	51·2	...	...	25·5	8·5	..	...	...	...	...	...	..	...	...	...	17·06
1855	17 2	...	...	8·6	8·6	..	...	...	...	...	..	..	...	...	...	...
1856	17·2	..	...	..	...	...	...	...	...	...	...	..	..	...	8·6	8·6
1857	163·7	...	...	...	...	...	...	...	..	..	...	..	8·6	146·5	...	8·6
1858	5·1	...	..	5·1	...	...	..	...	...	...	..	..	...	...	...	...
1859	10·0	..	..	5·0	5·0	...	...	...	...	...	..	..	...	..	...	...
1860	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...
1861	9·4	..	...	...	4·7	...	...	...	...	...	...	4·7	...	...	...	...
1862	14·01	4·6	...	4·6	...	...	..	...	...	4·6	...	..	...	...	...	...
1863	4·7	...	..	...	4·7	...	...	...	...	..	..	..	..	...	...	...
1864	5·1	...	...	..	..	...	..	...	...	..	...	..	...	5·1	...	...
1865	11·2	5·6	...	5·6	...	...	...	...	...	..	..	..	...	..	...	...
1866	17 3	11·5	...	5·7	...	...	...	...	...	..	..	..	..	..	...	...
1867	11·8	...	..	5·9	...	...	...	..	5·9	..	..	...	..	...	...	...
1868	12·2	...	...	...	...	...	...	..	6·1	..	..	6·1	...	...	...	...
1869	18·2	6·06	6.06	...	...	6.06	...	...	...	...	...	...	...	..	...	...
Total.	20·6	2·6	0·2	3·5	2·3	0·5	0·2	0·2	0·5	0·2	0·2	0·5	0·2	6·1	0·5	2.3

In the twenty years to which the Table I. refers, there have occurred 12 fatal cases of cholera out of an aggregate strength of 3,393. Fatal cases occurred in ten out of the twenty years, and with the exception of the year 1854, in which three deaths occurred, the mortality has been limited to a single case in each year of cholera prevalence. With the exception of the year 1854, therefore, it is quite clear that cholera could have had no *epidemic* prevalence amongst the people employed in the factory. And as regards 1854, one death occurred on the 9th June, another on 3rd August, and the third on 16th October, proving that cholera was not epidemic amongst the factory hands even in that year.

The years 1860, 1861, 1862, and 1866 were periods of unusual cholera prevalence in Madras, and yet in only two of

these years (1862 and 1866) did single cases of cholera affect the employés of the establishment.

It must be remembered that native workers sleep at home nightly, and live at home on Sundays, and that they spend the numerous other holidays allowed to Government servants at home, generally in squalid and unhealthy neighbourhoods where epidemics are rife, and that on all of these days the protective influence (if any) of the gunpowder dust and sulphurous acid fumes would be lost to them, and that they would probably be just as liable as their neighbours to cholera influences, while sleeping and living in localities subject to cholera invasion. The low ratios of mortality from dysentery and diarrhœa are very suggestive.

The table shows that out of an aggregate strength of 3,393 in twenty years, 12 persons died of cholera, or in the ratio of 3·5 per mille. Mr. Balfour in his Statistics of Cholera, shows that for a period of 24 years ending 1868, the Madras Native Army lost at the rate of 4·3 per thousand of mean strength. But the comparison with the Native Army is a scarcely fair one to make, inasmuch as the workers in the Madras Gunpowder Manufactory, for the most part, live in one of the most unwholesome districts of Madras town, or in the Municipal division which includes Choolay, Pursewalkum, Vepery, &c., while Native Troops live generally in healthy stations, and are, to some extent, under sanitary supervision in their domestic life.

The population of the suburbs of Madras in which the powder makers live, is known with tolerable accuracy, and since the year 1855 the annual cholera mortality of the district has been specially registered.

The results of the registration in comparison with the mortality of the powder workers is given below.

Comparison of ratios of Cholera mortality per 1000 *of the Population of the 6th Municipal Division, and Powder Factory.*

TABLE II.

6th Municipal Division.	Population.	1855	1856	1857	1858	1859	1860	1861	1862	1863	1864	1865	1866	1867	1868	1869	Mean of 15 years.
Supposed place of residence of the workmen of the Powder Factory.	41506	9·2	4·6	6·6	11·38	4·1	8·8	12·2	11·03	6·09	2·9	4·3	15·5	1·1	..	3·4	6·7
Gunpowder Factory establishment.	174	8·6	..	..	5·1	5·0	...	..	4·6	..	..	5·6	5·7	5·9	..	..	2·6

With reference to this table, the most noticeable fact is the heavy district cholera mortality in 1858, 1860, 1861, 1862 and 1866, and the comparative freedom of the gunpowder workers during these years. It may be observed, too, that although cholera prevailed in the district during fourteen out of fifteen years, deaths occurred only in seven years of the fifteen in the gunpowder establishment. While the people of the district were losing 6·7 per thousand every year of their number from cholera, the powder workmen lost only 2·6.

The following table is given to illustrate the liability of the gunpowder factory servants to injuries fatal to life, in comparison with the Native Army during peace years.

TABLE III.

	Strength.	Deaths from injuries.	Ratio per 1000 of strength.
Native Army (four years.).....	112,597	17	0·15
Gunpowder establishment (for twenty years).....	3,393	21	6·18

But for the liability to deaths from violence, the gunpowder workers have an undoubted advantage in regard to prospects of longevity over the inhabitants of the district in which they live.

This will be best seen in the following table comparing the death ratios from disease and violence from 1855 to 1869.

TABLE IV.

	Aggregate Population of 15 years.	Deaths.		Ratio per 1000 of population, mean of 15 years.	
		From disease.	From violence.	From disease.	From violence.
6th Municipal division, supposed residence of the workmen of the Powder Factory.....	622,590	25,264	132	40·5	0·2
Gunpowder Factory Establishment.....	2,616	45	18	17·2	6·9

Thus we see that the population of the suburb of Madras in which the people reside die at the rate of 40·5 per thousand, while the mortality amongst the powder workers from disease is only 17·2.

The popular idea in regard to gunpowder workers being specially exempted from contagious disorders fatal to life, being thus in a measure confirmed by statistical data, the question arises—To which ingredient of gunpowder is the protective effect most probably due ?

In the factory, all the ingredients of gunpowder, nitre, sulphur and charcoal, are separately refined or purified. The nitre of commerce is purified from chlorides and sulphates, by solution in water and recrystallisation to the required standard. The sulphur is sublimated or powdered in buildings set apart for the purpose ; sulphurous acid is largely disengaged in these rooms, and can be detected in the air of the various apartments, and also of the mixing and granulating rooms. Charcoal is made in the factory with great care in iron retorts. The gaseous products of the distillation of wood pass off without coming into contact with the people. It may be inferred therefore that the ingredient which is most cognizable to the senses (sulphur), on account of its liability to oxidation and conversion into sulphurous acid ($S O_2$) is the active protective agent, if any, in gunpowder works.

Some of the employés are not, in the course of their ordinary duties, brought into contact with sulphur in its raw or mixed condition, but it would seem from the annexed cholera casualty roll that the persons employed in mixing the materials of gunpowder were not wholly exempted. It is impossible to say with regard to these deaths, whether the people had, or had not, been regularly at work in the factory before seizure.

Should cholera deaths hereafter occur amongst the servants of the institution, it would be well that a careful account of all the particulars of the cases should at once be placed on record for the benefit of future enquirers. Such a record should show the duties of the person attacked ; his days of attendance and periods of absence before the attack ; his place of residence and its sanitary condition ; and health-state of other persons living in the house or neighbouring houses.

Casualty Roll of Deaths by Cholera among gunpowder workers. (20 *years.*)

Occupation.	Names.	Date of Casuaities.	Nature of Casualties.
Drying and barrelling man	Mootoo	12th Feb. 1850.	Cholera.
Press and glazing man	Annudary	28th Nov. 1853.	do.
Hammer man	Narasoo	3rd Aug. 1854.	do.
Press and glazing man	Lutchmanan	9th June 1854.	do.
Mixer	Lutchmanan	16th Oct. 1854.	do.
2nd Peon Office	Narrainsawmy	5th Mar. 1855.	do.
Refining woman	Coopachee.	16th Apr. 1858.	do.
Foreman Corning room	Moonesawmy	25th June 1859.	do.
Mixer	Yamooloo	17th do 1862.	do.
Corner	Seenivasen	28th Jany. 1865.	do.
Do.	Lutchmanan	29th July 1866.	do.
Refining woman	Polee	31st Jany. 1867.	do.

OURSELVES.

The present number of the *Madras Monthly Medical Journal* will complete the publication for the year 1870. While we have to offer our acknowledgments to many friends for literary, and to numerous subscribers for pecuniary support, we feel that an increase both in contributors and subscribers is essential to a prolonged and healthy existence of our bantling.

We again therefore appeal to the whole body of our professional brethren in Southern India, to testify by their co-operation and support, that a medium of professional communication, such as is put before them, is of practical use. At the best, we can never hope to establish, in so limited a field, a circulation more than enough to pay the expenses of production ; but with the support of the profession, it will be our earnest endeavour to maintain the reputation of the periodical, and to make it what it professes to be—a record of medical progress in the southern portion of the Indian dominion.

THE FUNGOID THEORY OF CHOLERA.

Dr. Lewis, one of the medical officers specially selected at Netley to conduct microscopical observations in India, has, we observe, published a preliminary report, embracing the results of his labours up to the month of April 1870. His colleague, Dr. D. D. Cuningham, has not as yet given us the results of his investigations. The latter gentleman has recently been deputed by the Sanitary Commissioner with the Government of India to conduct enquiries in the Madras Presidency ; but as we understand that Dr. Cuningham has been specially instructed not to hold

any official communication with the Sanitary Commissioner of Madras (the only officer in the Presidency who is in a position to afford reliable information as to the movements of cholera), we fear that the results of his visit to this part of India are not likely to be satisfactory either to himself or the scientific world at large. We sincerely trust that the great scientific investigation now in progress is not to be marred by a pitiful jealousy amongst Sanitary Commissioners, or by that passion for "Imperial symmetry" which is the bane of so many things Indian. To our thinking, if Dr. D. Cuningham is to pursue his investigations in this Presidency, he should work in communication with the local sanitary and medical authorities, who, we feel persuaded, would be only too willing to afford him every scope for his special pursuit.

Dr. Lewis' report is an exceedingly interesting document. It is profusely illustrated by drawings made under the camera lucida, and these have been engraved in the office of the Surveyor General of India in a manner unusually good for India, where, as a rule, the "fine arts" are not very well represented.

There were two points to which Dr. Lewis' attention was primarily directed—the theory of the fungoid organ of cholera, as advanced by Professor Hallier of Jena, and the theory of Professor Max von Pettenkofer of Munich, as to the connection existing between cholera and certain conditions of the soil.

In regard to the first theory, Dr. Lewis' investigations go to show that there is no evident connection between fungi and cholera.

His conclusions are thus summarized :—

1. That no cysts exist in choleraic discharges, which are not found under other conditions.

2. That cysts, or "Sporangia" of fungi, are but

very rarely found under any circumstances in alvine discharges.

3. That no special fungus has been developed in cholera stools, the fungus described by Hallier being certainly not confined to such stools.

4. That the still and active conditions of observed animalculæ are not peculiar to this disease, but may be developed in nitrogenous material even outside the body.

5. That the flakes and corpuscles in rice-water stools do not consist of epithelium, nor of its debris, but that their formation appears to depend upon the effusion of blood plasma; and that the "peculiar bodies" of Parkes found therewith, correspond very closely in their microscopic and chemical characters, as well as in their manifestations of vitality, to the corpuscles which are known to form in such fluids. These are generally to a greater or less degree associated with blood cells, even when the presence of such is not suspected, especially as the disease tends towards a fatal termination when the latter have been frequently seen to replace the former altogether;—and

6. That no sufficient evidence exists for considering that vibriones, and such like organisms, prevail to a greater extent in the discharges from persons affected with cholera, than in the discharges of other persons, diseased or healthy; but that the vibriones, bacteria, and monads (micrococcus) may not be *peculiar in their nature*, for these do vary, may not be the product of a peculiar combination of circumstances, and able to give origin to peculiar phenomena in a predisposed person is "not proven."

So far as scientific progress is concerned, these investigations leave us pretty much as we were. Dr. Lewis differs from Beale and Macnamara, both careful microscopists, in regard to the quantity of *epithe-*

lium shed in cholera stools. Would it not be possible for Drs. Macnamara and Lewis to examine a series of specimens conjointly, and to settle this question definitely? We know that scarcely any two observers are ever in thorough agreement as to what the miscroscope reveals to them. Some men have a knack of seeing things that don't exist (except subjectively), while others cannot see things that do exist.

Dr. Beale and Mr. Macnamara are positive as to the fact of the shedding of intestinal epithelium on a large scale; while Dr. Lewis, a special investigator, and evidently a very careful and painstaking worker, says that the epithelium is not thrown off, but that a "blood plasma" is.

Dr. Lewis' enquiries in regard to Pettenkofer's theory are merely preliminary, and the observations are not yet sufficiently extended to allow of an opinion being formed one way or the other. We welcome his first report as a valuable contribution to science.

HEALTH OF THE MADRAS ARMY (BRITISH TROOPS) IN 1870.

FROM the annual report for 1869 of the Sanitary Commissioner for Madras, we get the following general view of the health state of *European* troops.

Strength (according to stational returns)		...	10,880
Admitted sick per mille	... ...	...	1258·6
Constantly sick „	... ...	...	59·98
Deaths, in hospital	... 21·04	...	23·34
out of hospital	... 2·3		
Invalided, for discharge or change of climate	... ...	...	55·7
Total decrement from deaths and invaliding.			89·04

With regard to these figures, we may state that the sick-rate is low, while the mortality is higher than in any single year since 1859. The hot season

of 1869 was an unusually trying one throughout India, giving rise in many stations to fatal attacks of heat apoplexy, nineteen men dying altogether from this cause. The troops at Kamptee, Secunderabad, Thyetmyoo, and Fort St. George, suffered from cholera, but the total mortality from this disease was only 27.

Hepatic disease (abscess) is said to have been unusually prevalent and fatal at Secunderabad and Bangalore, and the total deaths (57) from this form of disease, exceeded the combined mortality from cholera and sunstroke. With regard to hepatic abscess, the Sanitary Commissioner remarks :—

"This particular form of disease is certainly not diminishing in India. Sanitary improvements of stations have as yet been able to effect nothing for its diminution. The disease is more fatal than cholera or fever, that is, it destroys more lives in the British portion of the Madras Army, and as yet sanitary and medical science have been unable to devise any effective measure for its prevention."

As regards *Fevers*, we see that *typhoid* caused nine casualties during the year, *typhus* one, and *continued* fever four. *Remittent* fever is said to have caused thirteen deaths out of 208 cases treated. Of small-pox there were three fatal out of a total of ten cases. Heart diseases claimed a total of seven victims; Phthisis and lung disease eighteen; "Dysentery," and "Diarrhœa" each caused fifteen deaths; and we are sorry to notice that Delirium Tremens was fatal to nine persons. The unusually high temperature of the hot months probably had something to say to the mortality of drunkards.

And as regards the ratio of invaliding of British troops, we gather that of the 55·7 per thousand of strength, 47·4 were for change of climate only, and 8·2 per mille for discharge from the service. By the

addition of this latter figure to the death ratio, we obtain the true Indian decrement of the army by deaths and invaliding, viz. 31·5 per thousand of strength. It is quite possible that some of the invalids for change of climate may never return to duty in India, but it does not follow on that account that their services are lost to the army. This invaliding for "change of climate" is a thing of comparatively recent development as regards the rank and file of the army. The absence of a provision for the speedy removal from India of the sick soldiers of the old Company's service, tended to account for a good deal of the superfluous mortality that formerly prevailed. With increased facilities for the shipping of invalids, the mortality of the European army in India has, on the whole, progressively fallen.

Since the employment of a special transport service between India and England, there has been a tendency to "overdo" the invaliding for change of climate. At least, this is the opinion of Dr. Beatson, C. B., Inspector General of Hospitals of Netley, who has lately remarked. "One thing is quite certain, and of this I am every day more convinced by my experience in invaliding men at Netley, that many men are sent home needlessly from India: not from any carelessness or neglect on the part of invaliding committees, but simply from the fact that many men worn down by the heat during the summer months, look so ill at the end of the hot season, as to justify the belief that they really require a change." Dr. Beatson advocates a change in the time of despatching invalids from India, so as to give men the benefit of the cold season in India, and to obviate the danger of exposing delicate men to a stormy passage, and arrival in England in mid-winter; and we must say that there is sound sense in the proposal, which we trust soon to see adopted by the authorities in India.

THE IRISH MEDICAL BENEVOLENT FUND.

We have received the last Report of the Royal Medical Benevolent Fund Society of Ireland—would it had a shorter name!—and we gladly comply with the request to make its objects, its performances, and its needs better known than they seem to be to our Irish readers. To Irish members of our profession only the Society appeals for support; and we cannot but hope that it will not appeal in vain to the numerous medical officers of both services in the Madras Presidency who come from the farther side of St. George's Channel.

The Society was founded in 1842, and has, therefore, been working for twenty-eight years. Its primary object is "the relief of medical men under severe and urgent distress, occasioned by sickness, accident or any other calamity." Secondarily "under circumstances of peculiar emergency, relief may be extended to the widows and orphans of physicians and surgeons, it being understood that it is not the design of this fund to relieve medical men from the necessity of providing for their families by ordinary life assurances and such other means as prudence dictates." Since its foundation it has disbursed to the classes above mentioned £11,170; but its means are not equal to its necessities, nor does it receive from those who are able to help assistance adequate to its needs. From the last—the twenty-eighth—Annual Report, we extract the following statement of what the Society effected during the year 1869-70.

"Applications and Grants.—The total number of applicants for relief this year is considerably beyond that of any former year. *Fifteen* of these are medical men, either suffering under temporary distress, or permanently disabled through disease or weight of years. Since last Report, one physician, who had been for eleven years receiving aid from the Society, died at the advanced age of eighty-nine. He was bedridden for a considerable time before his death.

Of the memorials sent in to the Society this year, *seventy-two* are from the widows, and *ten* from the orphans of medical men; thus making in all *ninety-seven* applications. *Twenty-three* applicants come before us for the first time, eight of whom are physicians or surgeons. Throughout the interval between the last and present distributions, *seventeen* grants have been made. These were given only on account of the pressing embarrassments of the several applicants, *eight* of whom were medical men. The total amount of these anticipatory grants was £154 12s. 9d., and the sum to be given away in grants at the present distribution is £745; thus making the total disbursement of the present year among the recipients of the fund, to be £899 12s. 9d. It is to be remarked here, that the Committee deemed it right in *ten* instances to refuse granting any aid whatever from the Fund; but in no case was aid withheld where the applicant was really in want, and the facts stated in the memorial duly authenticated by Members; for it has been the practice of the Society to distribute its available money among *all* the eligible claimants for relief, but in such proportions as their comparative exigencies seem to justify. Whilst, therefore, it is true that no applicant was refused a grant through want of funds, still it is no less true that to very many of the recipients the aid given fell very far short of their claims and of their urgent necessities."

Bombay has been working in the cause for some years, and her Branch sent home a contribution of Rs. 845 in 1869-70. In the same year, a Branch was formed in this Presidency, and a humble contribution of Rs. 210 was remitted this year. This year the Secretary hopes to be enabled to improve considerably upon last. There are in Madras more than eighty possible contributors, of whom, so far, only eighteen have responded to the Secretary's appeal. With the example of the smaller Presidency before them, the other Irish medical officers in Madras can scarcely fail to come forward. A small subscription from each—involving no appreciable sacrifice to him—may cheer some poverty-stricken home in his native land; and so help a professional brother whom disease or other misfortune has rendered destitute.

Dr. King will be happy to receive Donations and Subscriptions for the Madras Branch, which will be duly acknowledged in this journal.

MEDICAL EDUCATION IN TURKEY.

WE learn from the *Gazette Médicale d'Orient* that an Imperial School of Medicine has been in existence in Constantinople for forty years; but it seems to have performed its functions very imperfectly. It was intended to supply medical officers to the Army and Navy, which require at least 500; but there have been few years in which so many as ten graduates passed out; and not more than 140 of its alumni are actually employed in the military department. There are 130 vacancies in the latter, and the Government is at its wits' end to discover means of filling them. The *Gazette* does not give a flattering description of the School. "It offers" it says, "no facilities for study; the lectures are generally weak and irregularly attended by the pupils; practical demonstrations are almost entirely absent; the clinical instruction is insufficient; the examinations are shams; most of the pupils leave the school with the very slightest supply of medical baggage." The Director receives credit for the best intention as regards its efficiency and reform; but his efforts are thwarted by whatever in Constantinople corresponds to our own Horse Guards. Meantime, medical officers for the public services are being sought in Germany; but the terms offered are not enticing, and the Fatherland needs her doctors for herself at present. The following incident related by M. Mühlig at a recent meeting of the *Société Impériale de Médecine* is not calculated to seduce any of our Indian medical officers into the Turkish Army. A physician and a surgeon belonging to that service were condemned the other day to two years' and eighteen months' imprisonment, respectively, because a soldier under their care died of tetanus a few hours after the removal of the ungual phalanx of a finger! The surgeon had cut away as

a preliminary, with the scissors, a shred of gangrenous integument. The physician "qui ne brille pas precisément par l'intelligence" indignantly ordered the bone to be removed, and he was immediately obeyed. The patient died of tetanus, and his death was credited to the two medical officers. A mixed court of combatant officers and graduates of the Imperial School of Medicine decided that a certain clause of the Military Penal Code was applicable, which lays down that any medical officer who *by his negligence* causes the death of a soldier is liable to imprisonment for from six months to two years. In spite of the opinion of the Superior Council of Medicine at Constantinople that the clause was inapplicable to a case in which death resulted from tetanus following a contused wound, the unhappy doctors were duly condemned as above stated. The Society appointed a committee to lay the case before the Grand Vizier, who directed their release, and promoted the physician as a compensation. It will henceforward be a wise rule of practice in Turkish military hospitals to trust implicitly to the *vis medicatrix naturæ*, and let limbs amputate themselves rather than perform operations attended with more danger of unpleasant consequences to the operator than to the patient.

INDIAN SNAKES.

WE regret that we have not yet been able to notice Mr. Nicholson's valuable little Manual of Ophiology, recently published in Madras. We hope soon to examine it in detail. Meantime we recommend it to our readers as a popular and yet scientific account of an interesting and ill used class of animals.

REVIEWS.

RECENT CONTRIBUTIONS TO THE LITERATURE OF ASIATIC CHOLERA.

1. *Epidemic Cholera in the Bengal Presidency.* By JAMES L. BRYDEN, M.D., Surgeon Bengal Army, Statistical Officer attached to the Sanitary Commissioner with the Government of India. Calcutta: Office of Supt. of Govt. Printing. 1869.

2. *A Treatise on Asiatic Cholera.* By C. MACNAMARA, Surgeon to the Calcutta Ophthalmic Hospital. London: John Churchill and Sons. 1870.

3. *Statistics of Cholera.* By EDWARD BALFOUR, L.R.C.S.L., Deputy Inspector General of Hospitals, Madras Army. 2nd Edition. Madras: Athenæum and Daily News Office. 1870.

4. *Address to the Bengal Branch of British Medical Association.* By J. MURRAY, M. D., Inspector General Indian Medical Department. Calcutta: *Indian Medical Gazette,* March 1870.

(Continued from page 379, No. XI.)

THE work of Deputy Inspector-General E. Balfour is a reprint of a small pamphlet originally published by him in 1849, and containing the statistics of cholera of the Madras Army brought down to the most recent date. Mr. Balfour has further availed himself of the obtainable cholera statistics of the Bengal and Bombay Presidencies, and has drawn largely on the figures supplied by Drs. Murray and Bryden in their recent voluminous reports. We have already, in reviewing Dr. Bryden's book, stated our belief that the statistics of isolated bodies of men, such as European and Native troops, and prisoners in jail, do not help very materially towards the settlement of the many vexed ques-

tions in connection with the diffusion of epidemic cholera. These bodies of men are located within comparatively small areas, and are separated by wide tracts of country, concerning the cholera history of which we have not, until quite recently, had any means of obtaining information. But although the statistics of such bodies of men *per se*, are not of the value we once attached to them, they certainly are most useful, on account of their great accuracy and trustworthiness, when compared and considered in relation to the cholera mortality of the whole population.

It is only quite a recent thing that the Government of India has recognized the need of a systematic registration of the causes of death, or of the importance of accurate vital statistics of the population of India.

Since the introduction of a plan of registering deaths in this Presidency in 1866, much valuable information has been collected; and as the system attains greater accuracy, the movements of cholera may be traced with a precision, wholly unknown to the past collectors of data from isolated stations. It is no demerit to Mr. Balfour to say that the present methods of obtaining cholera statistics are likely to yield more positive and reliable results than the data available to himself when, in 1849, he set the example to his Indian confréres in applying the numerical method to the elucidation of the natural laws of cholera. To Mr. Balfour certainly belongs the honor of having first directed public attention to the importance of statistical enquiry regarding cholera; and in his later work "On the localities exempt from cholera," he most clearly indicated a line of inquiry as to the physical conditions of these exempted localities, which is only now about to be commenced, under instructions from the Secretary of State.

We may remark here that the list of Mr. Balfour's works at the end of his pamphlet causes us to marvel how one man could have accomplished so much literary work on such a variety of subjects. We find that he is the author not only of works on cholera, but of a "Cyclopædia of India and Eastern and Southern Asia," the second edition of which is now passing through the press; also of works on "Timber trees," and the "Influences exercised by trees on the climate and productiveness of a country;" translations of medical and other text-books into Hindustani; and "reports" without number, on the contents of the Madras

Museum, of which Dr. Balfour was the founder. All this bespeaks an amount of mental activity on the part of the author, creditable alike to himself and the grand old service, of which posterity will account him a worthy member.

Although from the nature of the present work detailed criticism is not to be expected, there are a few points that may, we think, be noticed. And first, we should have preferred that Mr. Balfour, in bringing out a new edition of his "Statistics of Cholera," should have confined himself to a few main points really capable of statistical illustration, and that these several points should have been indicated by separation of the contents of the book into chapters or sections. With the present arrangement of the matter, it is not easy to find what is wanted without a lengthened search, and as the statistical tables will be often referred to by those pursuing enquiries about cholera, this bad arrangement of the matter is a real defect in the book.

Mr. Balfour commences his remarks by a brief allusion to the history of cholera prior to the year 1817. He agrees with every one who has ever investigated the history of disease, that the great cholera wave of 1817 was not the first, by a good many, that had overrun India. But there can be no question we think that *epidemics* of cholera had been so much in abeyance for some years prior to 1817, that the existing generation of medical practitioners in that year, for the most part, regarded it in the light of a new disease. Mr. Balfour gives tables showing the army mortality from cholera from the year 1825 down to the present time. These tables all testify to the fact that cholera is a disease that does not prevail with any regularity from year to year, and that a high rate of prevalence in one part of India is not necessarily accompanied by great prevalence in other parts.

We see, too, in the past, as in quite recent years, that the almost complete immunity of the army for one or two years, is no guarantee that the disease is dying out, or diminishing in intensity; but we do seem to gather from these facts that the disease is one of periodical intensity, though the localities affected may vary from year to year. In any *general* tables of army mortality from cholera, we lose sight of the special localities affected in each year. We can, in fact, only understand the laws of movement of cholera when we correlate the mortality bills of the civil population with those of the localities occupied by the army.

The general tables, however, clearly show that in some years cholera is widely distributed in the army, while in other seasons the pest is almost completely in abeyance, or prevalent only in circumscribed localities. As regards the Madras European Army, there are two years in the table given at page 5, which stand out with undue prominence as great cholera years, 1852-3 and 1857-8. During the first of these years, the excessive cholera mortality was almost entirely confined to the expeditionary force employed in the second Burmese war, and in the latter year the mortality was chiefly confined to the Madras troops which went up to Bengal to assist in quelling the mutiny. It is obvious therefore how much the cholera rates of the European army in India depend upon the localities they occupied. If these localities are in sites known to be subject to frequent cholera invasion, or within an endemic area, it is quite certain that European troops will suffer. Mr. Balfour shows that the European troops in the Bengal Presidency have suffered more frequently, and in a higher degree, than those stationed in the Madras Presidency, and the fair inference is, that the troops in the former Presidency are located nearer to the great sources of cholera, or that the sources of cholera are more numerous than those in the southern Presidency. We have already seen that in the only two years when the average mortality of the southern army was largely exceeded, the troops marched into the areas of endemicity, from whence cholera appears to be distributed through Northern India.

The question of the greater liability of the European soldier to cholera we have already discussed, and we think that Bryden and Balfour are both in error in attributing the proneness to a race difference. We have already quoted Mr. Balfour's tables in Appendix *D.*, to show that in the Madras Presidency there is no preponderance of mortality of European over native troops, and with these extended tables of modern results contradicting the apparent results recorded at page 7, we think the explanation of a race difference cannot be maintained. The fact, as regards Bengal, must be accepted, and the true explanation has yet to be sought for.

Mr. Balfour endeavours to solve by statistical evidence the question as to the connection between epidemics of cholera and of other diseases of the same class. This is a question on which a great deal may be said, though as yet the

accumulated facts do not help to settle it one way or the other. It must be remembered that cholera, in common with small-pox and malarious fevers, has a tendency to fill a vacuum, or unoccupied area.

The tendency may be expressed perhaps in this way; supposing a locality to have had no cholera existing in it for two or three years or more, cholera will certainly prefer to commit its ravages within that vacant choleraic space, rather than in an area which the disease has recently passed over and exhausted itself in. Exactly the same thing happens in the diffusion of small-pox. The disease ravages most severely in districts, which for some prior time have been empty of it. Whatever explanation we may offer, the fact remains the same, that it is in *newly invaded districts* that epidemics find their chief victims. Now, a cholera invasion of a locality may follow or precede an invasion of small-pox or fever, and whenever these all occur in the same year, there appears to be a connection between the prevalence of cholera and other forms of epidemic disease, but this is not invariably the rule, and sometimes epidemics appear to alternate one with the other, as, for instance, in 1868, small-pox took the place of cholera, over a very large tract of southern India, attaining its maximum of fatality at the very time that cholera was almost universally quiescent. The study of these conditions can only be profitably carried on, where the field of observation is wide enough to exclude error. So far as we can see at present, it is not necessary that the occupation of a locality by one disease should exclude another, nor is there any reason why several epidemics should not prevail in the same locality either at one time, or following each other in rapid succession.

The whole history of cholera goes to show that its movements depend chiefly upon the direction in which there is vacant territory ready for occupation, and that when it makes good its footing within that territory, it will pursue its life history to the end. It is not influenced by the prior occupation of the same territory by small-pox or fever. All these diseases really run in courses or cycles of their own, though the cycles of intensity may now and then approach each other with sufficient nearness to show an apparent connection. As regards malarious fevers, we believe that they will generally be found to prevail

with greatest intensity, after unusual saturation of the soil by abnormal rainfall, and when the surface soil is undergoing a process of desiccation. Pettenkofer holds also that the sinking of the subsoil moisture is favorable to the development of cholera, but the facts collected in India in regard to this question do not yet enable us to speak with any assurance. We have lately in Madras seen the extinction of cholera under the very opposite conditions of extreme dryness and extreme moisture of the soil, and we have not yet been able to trace any direct connection between the prevalence of cholera and fever.

As regards the intensity of cholera, Mr. Balfour clearly shows that more persons have died in proportion to attacks of late years in Bengal, than was the case in the earlier periods of the prevalence of cholera.

From 1854 to 1867 there died in Bengal one European to every 1·6 attacked, and of native troops one in every 2·08, and of prisoners in jail one in every 2·3.

Mr. Balfour remarks, "The cause of the increased mor-"tality is not shown. From my own observation, sanitary "preventive measures have lately seemed to be regarded as "of primary consideration, and curative measures less "esteemed." It strikes us, however, that some of the apparent difference in the results of modern and ancient medical practice may be accounted for by the fact of a difference in the mode of registering disease. After the outbreak of 1817 it was the practice to register every case as cholera, but later, it became a custom to enter doubtful cases, in which the choleraic diarrhœa was easily checked, as diarrhœa, and the general result of this practice was to make the cholera mortality show much higher than it really was. There is doubtless much truth in the observation that preventive measures have occupied more attention than treatment in recent times, and we think the fact is to be deplored, for cholera in its earlier stages is undoubtedly a curable disease, and especially when remedies can be promptly resorted to. The use of mineral, acetic, and carbolic acids certainly appears to have a marked benefit, while a full dose of brandy and opium and rest, will certainly often cut short an attack, that would otherwise pass rapidly into fully developed cholera.

Mr. Balfour's tables at page 29 and 30 show, we think

most clearly, the value of early treatment, and it may be freely admitted that medicines, in any but the early stages of the disease, are not much to be depended upon.

A noticeable circumstance about cholera is the decrease which has occurred in the Madras army of late years. The fact is distinctly put forth in Mr. Balfour's table, page 38, which we give below, as also that gentleman's remarks on the probable causes of the decrease. Cholera is certainly not decreasing to any appreciable extent amongst the civil population, for as late as the year 1866, *more than one-third* of the total mortality in this Presidency was due to cholera. We think there can be no doubt that the improved hygienic conditions of the European and native soldier, and especially of the modern methods of moving troops, have had a great deal to say to the marked and progressive decrease of cholera cases in the last half century.

"To what cause, then, are we to attribute the decreasing numbers of attacks, alike amongst the European and the Native soldiers of the Madras army? there have in the time under review been improvements in the pay, diet, dress, and dwellings of both arms of the service, and the conservancy in and near their barracks and lines, has been more closely attended to; but the most marked change in the Madras Presidency has been the less frequent marches of regiments and the increased facilities and comforts which steam-vessels, rail-roads and horse and bullock transit-carriage have afforded when moving. Its prevalence is still great amongst the Civil population in every part of the Madras Presidency, and in some collectorates the mortality from it amounts, in some years, to one-third or one-half of all the deaths.

Madras Army. 48 years.	Ratio per 1,000 Admitted of Strength.	
	Europeans.	Natives.
1821 to 1833	43·6	14·7
1834 to 1846	15·2	14·8
1847 to 1857-8	10·4	7·1
1858-9 to 1868	6·2	7·3

The agent causing this disease is as virulent and, perhaps, is as abundant as ever; but the European and native soldiery of Madras may be less exposed to it."

As regards the propriety of moving a corps out of Cantonments on the appearance of cholera, Mr. Balfour shows that the statistical data at present available do not warrant the assumption that the disease will at once cease. It is well in this matter to remember the caution that Bryden gives, that a typical outbreak of cholera is only of short duration, and that we must not confound the results of movement into camp with the natural features of the disease. As regards our own experience, however, we have known two outbreaks in Fort St. George, where the effects of movement into camp were immediately manifest. In both cases the disease was confined to particular barracks, and ceased on their vacation; the cases occurring in camp after the removal, having evidently taken out with them the seeds of the disease. We think therefore that there is a good deal to be said in favor of the vacation of an infected locality, where a good healthy soil is available for an encampment and the season is not unfavorable for tent life. Mr. Balfour remarks on this point as follows:—

"This step of leaving a Cantonment has been prominently put forward as of great value, but the above data do not support the opinions of those who have recommended it. With European soldiers, prisoners and those of the Native soldiery of the Bengal army and Contingent levies, who leave their families in their native villages, it would be possible to make the move. But with many of the Bombay Native Regiments and with all the Madras Army it is impracticable, as every Madras soldier, on the average, has 3 followers in his house, and to supply tents or provisions for such a number would be impossible. In the South of India, the move into tents of any body of men, on the appearance of cholera in their barracks, their huts or their jails, will be deemed by Medical Officers as a doubtful step; in that part of India the cholera agent is so generally diffused that the chance of avoiding it by a move is small. Even in the Bengal Presidency, where moving out into camp was once strongly advocated, there has been a large restriction made."

The way in which cholera haunts the valleys of rivers is very well illustrated by Mr. Balfour in the following quotation. The fact is of great practical importance, for it shows us in what direction we must look for the causes of cholera, and above all that certain conditions of the sub-soil in regard to moisture have a marked influence on the endemicity of the disease.

"In the Peninsula of India, the neighbourhood and banks of rivers seem particularly dangerous. In 152 marches of Madras Native soldiers in which cholera broke out, 106 out-breaks occurred within 15 miles of rivers (the average distance was $3\frac{1}{8}$ miles): and, of those 106, 47 occurred on the banks. Of 10 out-breaks near the Pennar river in the Centre Division and Ceded Districts, 3 occurred on its banks. Of 5 out-breaks near the Cauvery river, 1 was on its banks. Of 9 near the Palaur river, 2 were on its banks; of 8 near the Tumbudra and its affluent the Toonga, 6 were on their banks; and of 7 near the Kistna 6 were on the banks. The delay on the banks of rivers and the labours in crossing them may render soldiers more liable to be attacked with cholera, but near rivers the contaminating agent seems to be more abundant. The water used from them may be polluted, or the cholera agent may seek the low, moist beds of rivers or the valleys in which they run, or, if it be a thing with life, moisture may be needed for its development."

Division.	Numbers of Out-breaks.	Number under 15 miles of a river.	Number on the banks of a river.
Presidency Division...	1	...	...
Centre Division.....	26	20	6
Southern Division. ...	24	21	13
Mysore Division.... ...	19	14	3
Ceded Districts....	32	22	9
Northern Division. ...	12	6	4
Hyderabad Subsidiary Force.....	24	16	9
Nagpore Force.....	2	2	1
Southern Mahratta Country.....	12	5	2
Total...	152	106	47

The question of endemicity is really a very important one. Dr. Bryden would apparently limit the region in which cholera is a normal product of the soil to a tract of country in lower Bengal, but we are afraid that we cannot allow to the Bengalees the exclusive honor of sheltering the only birth place of cholera. If we mistake not, the sandy strips of our coast line, and certain alluvial deltas on the eastern side of the Peninsula, are just as capable of yielding a supply of cholera material as any equivalent area in the Sunderbunds.

This question, however, as well as the limits of the endemic area in Bengal, has yet to be satisfactorily answered.

We are afraid our space will not permit us to do justice to Mr. Balfour's collection of cholera statistics, but we can

confidently recommend all those who are interested in such figures to examine the work for themselves. They will find no theories set forth, supported by doubtful figures, but the tables, so far as they go, are, we believe, perfectly reliable, and as a collection of data, representing the admissions and deaths from cholera amongst certain bodies of men, located in various parts of India, the book will always be of great value to students and investigators of the phenomena of a most mysterious pestilence.

The Treatment of Snake-bite in Victoria By GEORGE B. HALFORD, M. D., &c. Melbourne, 1870. Pamphlet, reprinted from *The Australian Medical Journal.*

A PAPER read before the Medical Society of Victoria on June 1st, 1870, and the report of the discussion which took place on the occasion, are reproduced together under the above title. Dr. Halford's success in his experiments on ammonia as a remedy for poisonous snake-bite not having been corroborated in the similar experiments made in India, the *Lancet,* in some comments on the enthusiasm created at Melbourne by Dr. Halford's success, criticised the proceedings in a way which has been highly displeasing to the medical profession of Victoria in general, and to Dr. Halford in particular. The Melbourne professor of anatomy read this paper as a vindication of his discoveries as an answer to the "false statements" of the *Lancet.* The home medical paper does not seem, however, to be convinced by Dr. Halford's reply. It still says (September 3rd) "he has not adduced a single case in which genuine poisoning seems to have been neutralized, or in which the administration of ammonia by the mouth would not have produced precisely the same effects as its injection into the veins."

Now we cannot but say that *primâ facie* there seem to be insufficient grounds for such severe remarks. Unless the evidence can be impugned, unless the numerous witnesses who testified to the success of Dr. Halford's remedy in their hands can be shown to have been labouring under a delusion, the *Lancet* has no right to speak so strongly. Out of the twenty cases in the practice of about as

many different medical practitioners, seventeen recovered, and the three deaths were in the cases of children. In every successful case the injection of about thirty minims of Liquor Ammoniæ (or of five minims of the stronger solution diluted) into a vein brought speedy reaction and recovery, often in a very short time. In some severe cases the injection had to be repeated several times. The evidence, if good, is conclusive; we say if good, because the very strength of the case seems to have inspired the *Lancet* with suspicion. When we read of numerous cases where the bitten man "perfectly insensible, cold, and on the point of dying, was roused in one minute after the injection, and in less than half an hour walked away recovered,"—where a woman brought in from a distance of 14 miles in a completely comatose condition, sits up and eats bread and butter in a quarter of an hour after the single injection which was performed,—where a woman paralysed and insensible "roused immediately and walked about the ward without assistance" —we own that we ourselves are utterly at a loss for a satisfactory explanation of such miraculous cures. Dr. Halford's own explanations are very far from satisfactory; setting aside his theories about the ammoniacal gas being decomposed by electric forces in the body, and its hydrogen uniting with the active oxygen of the blood (which he has just before stated to be deficient in, and void of, oxygen) to form water with evolution of heat, and only following those arguments which are not absolute nonsense, we fail to find any reasonable explanation.

Taking for granted that ammonia injected into a vein acts as a direct stimulant to the heart, and sufficiently so to counteract the lethal effects of chloroform,* we yet fail to see how any amount of stimulus to the heart will enable that organ to rid the blood, in a few minutes, of the poisonous effects consequent on the introduction into it of what Dr. Halford calls the 'germinal matter' of the poisonous saliva. If the poison acted by paralysing the heart's action, we could understand the rationale of the treatment; but the heart appears to be only secondarily affected through the medium of the poisoned blood, and we naturally receive with much doubt, a remedy which proposes by mere stimulation of the heart to rid the circulation in a few minutes of a blood-

* An experiment to this effect, on a dog, is appended.

poison so strong as to produce complete coma. Still, however unexpected the result, it is none the less vouched for by Dr. Halford and numerous witnesses, and unless the evidence be impeached, the facts prove that numerous dangerous cases of snake-bite were cured by the injection of ammonia into a vein.

There remains now, in the words of the *Lancet*, "to square accounts with Dr. Fayrer of Calcutta." This will not be so easy, as Dr. Halford ascribes the failure of Indian experiments to their never having yet injected ammonia into the veins; whilst Dr. Fayrer declares that injection of ammonia into the veins of dogs was useless in averting the fatal effects of cobra poison.

Now, there is evidently a mistake somewhere; if ammonia cures the bites of three or four different kinds of Australian snakes, and acts by stimulating the heart's action, we would naturally expect the same effect to be produced in the case of Indian snakes. If it is not produced, as appears from Dr. Fayrer's experiments, two issues are alone possible: either that ammonia has not fairly been injected into a vein in India, or that the ammonia acts not as a direct cardiac stimulant, but in some other way. Dr. Shortt's experiments, as narrated in this journal, unfortunately do not help us, as his injections of ammonia were all hypodermic and not thrown directly into a vein. But Dr. Fayrer apparently *did* inject ammonia into a vein and without any effect. So we are driven to the conclusion that Dr. Halford must have made some mistake about the directly stimulant effect of ammonia, and that it acts, when it does act, as in Australia, in some other way. What that way is, we cannot say; there is no evidence that it acts chemically as a destroyer of the poisonous principle, or that it neutralises any imaginary acid in the poison; and we can only fall back on our old opinion, that the Australian and Indian classes of poisons are different. Zoological considerations amply justify us in our opinion. The fauna of India and of Australia are perfectly different, and the enormous lapse of ages which has taken place since the separation of the original fauna of the two countries, lead to the opinion that great dissimilarity must exist between snakes which have departed so widely from the common types which existed when the fauna were connected. The venomous snakes of Australia belong mostly to the Viperine sub-order, and Mr. Nicholson has

drawn attention to the great difference in action of the poisons of that class of snakes, not only from those of the other venomous sub-order, but also amongst themselves. Moreover, a consideration of what the poison really is, will show how unlikely it is that we should find an uniform action of the poison of different snakes. The poison gland appears to be simply the ordinary maxillary saliva-gland as possessed by all snakes, but magnified by natural selection, and secreting a poisonous saliva. Mammalian saliva owes its chemical and physiological properties to the presence of a nitrogenized substance called *ptyaline,* analogous to diastase in its power of causing chemical changes in certain substances submitted to its action, and liable in certain animals to be perverted by disease into a ferment of terrible power. Researches have not yet shown the point where the salivary secretion of snakes begins to be poisonous to animal life; but this much is certain, that the active principle of the saliva of *Trimesurus* is quite different from that of other vipers' poison, as the latter is quite different from cobra's poison. There appears ample ground to believe that the *ptyaline* of manmalian saliva is replaced in snakes by what we may call *colubrine* in the harmless snakes, *elapine* in the venomous colubrine snakes, *daboine* in the chain-viper, *trimesurine* in the green tree-viper, &c., &c., each of these principles having a more or less distinct action, and probably requiring different remedies. If we find such differences between the action of the snake-poisons of India itself, what differences may we not expect to find in the entire class of poisons when we proceed to a land the fauna of which differs from that of the rest of the hemisphere, far more than those of the old and new worlds between themselves. In this, we think, lies the antagonism of the Indian and Australian experiments in search of a remedy for snake-bite.

Practically, however, we think that the discovery of a set of antidotes, or even of a single general antidote for the bite of Indian venomous snakes, would be less valuable than it appears, unless the remedy were of general application, and of such simple character that it could be disseminated freely amongst the native population. Europeans, though standing in great fear of venomous snakes, do not personally suffer by them, and any plan involving the distribution of subcutaneous injection apparatus to police-stations, etc., is evidently all but useless to the native population. The only

thing to do is to offer rewards for the destruction of venomous snakes. As the number of common venomous snakes is very limited, amounting to three or four only according to Nicholson, there would be no difficulty in giving such a description of them by drawings as would prevent mistakes. This reward system is probably only applicable to large stations or to cantonments, as unsophisticated natives are far from eager to kill snakes, and the animals being of a very perishable material, subsequent inquiry into the nature of the snakes paid for by village authorities, would be impossible. It would be very interesting indeed if our Indian ophiotoxicologists discovered an effective antidote, and an European life might thereby be saved once in a dozen years or so; beyond this the subject is of less public importance than that claimed for it.

MEDICAL MISCELLANY.

Gelatine as a Single Article of Food.

To the Editor of the N. Y. Medical Record.

Sir,—I am induced to offer my notes of the following case for publication as a practical, and well-nigh fatal illustration of the fact, long ago demonstrated, that life cannot be sustained upon a single article of food, like gelatine, sugar, or starch.

Aug. 4, 1869.—Was called to child of Mrs. T—of Brooklyn. It had been brought from the city yesterday, to try change of air as a last resort although little hope was entertained of its recovery.

I obtained the following history:—The child is fifteen months old, has been raised by the bottle, and quite healthy until four weeks ago it was taken with diarrhœa, although not severely. Since then it has been steadily failing. A week later hooping-cough came on. The diarrhœa has continued pretty constantly, having three to ten green watery passages a day, although not profuse ones. During the past three days it has failed very rapidly, and for thirty-six hours now it has vomited everything as soon as swallowed.

The child is now reduced to the last degree of emaciation; is lying on its back upon a pillow, in the arms of its nurse; not a trace of color in its face; noticing nothing; scarcely able to raise its hand; its pulse barely perceptible; and keeping up a low restless whining cry.

I was told that *by the direction of its attending physician,*—a very respectable practitioner of Brooklyn—*its food was changed when taken ill, four weeks ago, from milk to a solution of gelatine. That since that time it had been limited absolutely to that, and that positively no other food had been allowed or given.*

To the evident satisfaction of its friends, I directed to commence at once with milk, the richest procurable, and

give a tablespoonful, diluted with ℥ii Aq. Calcis every hour; to give enema of ten drops of brandy in a little beef-tea every four hours; to allow a teaspoonful of water every fifteen minutes if thirsty, and no medicine except

℞ Chloroform ♏iv.
Aq. Calcis ℥i.

S. 1 teaspoonful every hour if vomiting continues.

5th.—Child has vomited but once since visit of yesterday. Took the chloroform and lime-water but twice. Has had milk every hour, and is ravenous after it. The bottle has to be taken away each time by force. Bowels have moved but once. Is restless and thirsty, but has much more color and life. To continue nourishment without change, and have Elix. Opii (McMunn) ♏ii. every four hours at night if restless.

6th.—Took anodyne twice, and rested better. No more vomiting. Bowels have moved twice; passages better in color and consistence. To omit enema and gradually increase quantity of milk.

7th.—Improving rapidly; sitting up this morning and looking very bright and cheerful. Bowels quite right. To substitute pure water for the lime-water in milk and have ℞ Ol. Morrhuæ ℥ ii., Sodæ Phosphatis ℥ i. M. 1 teaspoonful three times a day.

9th.—The child is laughing and happy, and excepting its cough, is perfectly well. Has still a ravenous appetite, can take a quart of milk a day, and is gaining flesh with perfectly marvellous rapidity.

G. Wilson Murdock, M.D.

On the amount of alkaloid in different parts of Atropa Belladonna and Datura Stramonium. By M. N. Gunther.

We exhaust twice, at a temperature of 30° to 40°C., the parts of the plants, reduced to fine powder, by means of ten times their weight of water containing about 3 per cent. of sulphuric acid. We strain and evaporate in a water-bath to the consistence of syrup. We add to the syrup three times its volume of alcohol in order to precipitate the albu-

minous constituents, and at the same time to re-dissolve the alkaloid simultaneously precipitated, and leave for 24 hours at rest in a warm place; then filter and carefully distil off the excess of alcohol. The acid residue is reduced by evaporation to a small bulk, say 30 to 60 grams, then shaken with ether of petroleum, to separate resinous and coloring matter. After having cautiously decanted the ethereal layer, we shake thoroughly with chloroform the aqueous liquid neutralized by ammonia, and repeat this operation so as to dissolve the whole of the alkaloid. We then agitate the chloroform solutions once or twice with water, in order to dissolve in the water the ammoniacal salts contained. Then we remove the greater part of the chloroform by distillation at a moderate heat, and finally allow the residue to evaporate spontaneously in a watch-glass.

By this process we obtain the atropine of the root, the leaves, and the fruit, green and ripe, of belladonna in the form of a crystalline, almost colorless, mass; while the atropine of the stalks remains in the amorphous condition.

Daturine is obtained in the amorphous state from all parts of the *datura stramonium*; apparently because the separation of the amorphous residue takes place under the influence of certain impure matters.

The results of the estimation of alkaloids in different parts of *atropa belladonna* and *datura stramonium* are given in the following Table:—

Parts of the plants analysed.	Quantity of parts used.	Quantity of alkaloids found.	Quantity of moisture in substance used.
	Atropa Belladonna.		
Leaves	50 grams.	0·1016 grams.	75·7 per cent.
Stalks	50 „	0·0211 „	71·1 „
Ripe fruit ...	50 „	0·1064 „	74·6 „
Seeds	40 „	0·1338 „	13·2 „
Green fruit ...	50 „	0·0985 „	79·76 „
Roots	64 „	0·0396 „	70·6 „
	Datura Stramonium.		
Seeds	50 grams.	0·1276 grams.	29·8 per cent.
Stalks	50 „	0·0092 „	70·8 „
Leaves	50 „	0·0384 „	74·9 „
Roots	34 „	0·0081 „	63·7

—*Bulletin de la Soc. Pharm. de Bruxelles.*

Hypodermic use of Ergot in Inertia of the Uterus.

Dr. H. Ernest Schmid, of White Plains, reports the following :—Mrs. H——was taken in labor on the second day of March. She did not send for me until 3 o'clock A.M. the following night. Her pains had been short but severe, recurring every 2 or 3 minutes. She felt them solely in the back, experiencing no down-bearing sensations whatever. I was the more astonished to find, on examination, labor far progressed, the posterior fontanelle occupying the centre of the inferior strait—the external parts well relaxed and dilatable, so as to admit of a quick completion of the remaining act of delivery. But three hours later the state of things was the same, with this one disagreeable difference, that she had no more periodical short *pains*, but only a constant severe pain in the small of the back, with not the slightest contractile action in the womb. By kneading the abdomen well with my left hand, and titillating the edges of the os with my right index finger, I could only effect a feeble contractile motion in its fibres, which again quickly subsided. Cold produced no better result. From a casual conversation I had had with her former medical attendant, who had delivered her of her first child at some distant town, I had learned that, after three days' ineffectual labor, marked by this same agonizing pain in her back, without uterine contractions, he had been obliged to extract the child with instruments, from no cause except this persistent inertia of the womb. I administered fluid extract of ergot to her, but it was of no avail whatever. While she was taking 3 drachms of it, two hours had elapsed. Then it occurred to me to give it hypodermically. I injected at once 25 minims of it in the upper outer part of her right thigh. In the course of 20 minutes a vigorous action of the uterus commenced, and with three very strong pains a fine female child was born in about 10 minutes. The placenta having been removed with very little assistance, the uterus contracted readily on itself. Although the ergot had been given by the mouth, the way in which the symptoms developed themselves strongly inclines me to the opinion that the final effect was due to the subcutaneous administration of the drug.—*N. Y. Med. Rec.*

Medicines used by the Chinese.

In a work taken from the library of a Chinese physician we find a catalogue of one thousand and twelve medicines, of which there are from metals and stones 138 kinds. Grasses and vegetables, 313 varieties. Trees (whether the medicine be found in the root, trunk, bark, leaf, flower, fruit or seed), 177. From the human body, 20 kinds. From animals, 91 kinds. From fowls and birds, 34 kinds. Bugs, worms, snakes, shell-fish, turtles, flies, &c., furnish 99 kinds. Fruits, 40 kinds. Of the cabbage, turnip, and melon families, 62 kinds. The list of medicines taken from the human body is as follows: Hair, cut fine and used in plasters; curly hair, woman's milk, dandruff, teeth filings, ears, exuviæ, parings of finger and toe-nails of pregnant women, which nail-parings are reduced to ashes by burning; bone of the forehead, reduced to ashes; beard of the upper lip; hair from virginis pubes; blood; the placenta; the gall.—*Ib.*

New York State Inebriate Asylum.

Since the 1st of May 1867, 228 patients have been discharged from this Asylum, situated at Binghamton, N. Y., which is conducted judiciously by Dr. A. Day. 113 permanently reformed, after a single probationary trial; 11 have fallen after a first trial, and 4 after a second; but these have overcome the habit of intemperance by returning to this institution. Dr. Day thinks that at least one-third of the remaining sixty-eight—of whom there are no certain tidings—have reformed. 25 are set down as failures; 3 were discharged on account of insanity; and only 4 died.—*Ib.*

MEDICAL INTELLIGENCE.

(General Orders by the Governor in Council.)

Officers in the Civil Department—Leave.

G. O. G. No. 222 of 22nd July 1870.—The following Notifications from the *Gazette of India* are republished:—

Financial Department, Fort William, the 14th March 1870.

Leave and Allowances—No. 1814.—The Governor-General in Council is pleased to lay down the following rules to meet the cases of Officers in the Civil Department who overstay subsidiary or preparatory leave prefixed to furlough or special leave on private affairs out of India.

If an Officer overstay his subsidiary or preparatory leave by a period not exceeding thirty days, he shall have the option of forfeiting all salary during the period of such overstay, or of cancelling the subsidiary or preparatory leave, and reckoning his furlough or other leave to which the subsidiary or preparatory leave is prefixed from the date of quitting his office; but if the period of overstay exceed thirty days, such option shall not be granted, and the furlough or other leave shall be held to have commenced from the date of the Officer quitting his office, and the subsidiary leave shall be cancelled.

In case the Officer is not entitled to the furlough or other leave on the date of quitting his office, a special report must be made to Government.

These orders shall be held to apply to preparatory leave under the rules for the Uncovenanted Service.

Simla, the 8th July 1870.

No. 1780.—The Governor-General in Council is pleased to decide that the rules contained in the Notification of this Department, No. 1814 of 14th March 1870, are applicable to the cases of Military Officers in civil employ who exceed subsidiary or preparatory leave prefixed to furlough.

Furlough Allowances.

Financial Department, Simla, Leave and Allowances, the 21st July 1870.

G. O. G. No. 234 of 5th August 1870.—The following Notification from the *Gazette of India* is republished :—

No. 2136.—The Governor-General in Council is pleased to lay down the following rule regarding the furlough allowances of Covenanted Civil Servants and Military Officers.

The furlough allowance prescribed in Section VII. of the Covenanted Civil Service Leave Rules of the 16th June 1868, is claimable whether the Officer on furlough is the substantive holder of an appointment or not.

A Military Officer who has been in civil employ, but whose employment in the civil department has ceased owing to the completion of his term of service, or to the abolition of his appointment, or to any other reason, and who therefore reverts to military employ will, from the date of so reverting, be entitled while on furlough to the furlough allowance of a Military Officer not in civil employ.

Illustration.—Colonel A. in civil employ, while absent on furlough from a civil appointment which he has held for five years, attains the age of 55, and is under rule no longer capable of remaining in civil employ. From the date of his attaining that age, he will be entitled to furlough allowance calculated on the pay of his rank as Colonel.

Privilege leave—Officers.

G. O. G. No. 243 of 19th August 1870.—The following extract from a letter from the Secretary to the Government of India, Military Department, to the Adjutant General, Bengal, dated Simla, 27th July 1870, No. 541, is published :—

With reference to your letter No. 1359-E of the 16th July 1870, inquiring with reference to the orders marginally cited, whether an Officer of the British or Indian service is at liberty to proceed anywhere beyond Indian limits on privilege leave, provided he can return to duty within the period of such leave, I am

G. O. C. C. 24th February 1865.
G. G. O. No. 931 of 1867.
Clause XXXI. of the Furlough Rules of 1868.

directed to acquaint you, for the information of His Excellency the Commander-in-Chief, that, under Clause XXXI. of the Furlough Rules quoted, an Officer is at liberty to proceed wherever he may desire on privilege leave, provided he can ensure his return before the expiration of his leave; but if an Officer proceeds to a place from which he cannot ensure return within the term of his privilege leave, he will be liable to the consequences of overstaying such leave; and authorities should not sanction an Officer's proceeding on privilege leave, if there should be any ground to suppose that he cannot return within the prescribed period.

Warrant Officer's Mess in H. M.'s Troop Ships.

No. 791 of 1870.—Under instructions from the Right Honourable the Secretary of State for India, His Excellency the Governor-General in Council is pleased to notify that Warrant Officers not holding honorary commissions are liable, under the Royal Passage Warrant, for the scale of messing given in the margin when provided with passage either from or on return to India.

Conductors, Apothecaries and all other Warrant Officers,	...1*s.* a day.
Wives	...4*d.* a day.
Children above two years,	...2*d.* a day.

In the case of Her Majesty's troopships, the necessary money should invariably be paid on board to the Pay Masters of the respective ships, as is done by Commissioned Officers, and the names of any defaulters, with the amounts due from them, should be immediately reported by the Pay Masters concerned on the arrival of the vessels at Bombay or Suez, to the Controller of Military Accounts of the Bombay Presidency, with a view to local recovery, or to the circumstance being promptly brought to notice of the Secretary of State for India to admit of the recovery being made in England.

The amount of messing money due from Warrant Officers proceeding on hired transports will, as heretofore, be realized by the Military Account Department prior to embarkation at the time of the settlement of their accounts: and in the case of those returning to India, the amount for which they are liable, will also be recovered by that Department unless they produce the necessary acquittance or voucher in proof of payment.

(General Orders by the Commander-in-Chief.)

Quarters—Officers.

No. 70.

Government* has been pleased to rule that, if the temporary absence of an Officer on duty exceeds one month, the house-rent of Government quarters for that period should be remitted, and the quarters considered available for others, unless the Officer consents to pay for and retain them.

* G. O. 249 of 1868.
† Military Department No. 397, dated 20th October 1869, to the Quarter Master General.

* Madras G. O. G. 11th December 1866, Page 220.

Advance—Officers' Quarters.

G. O. C. C. No. 60 of 3rd June 1870.—It is notified that the Government of India has ruled that when an Officer is transferred to another station after receiving, under the provisions of Government General Order* No. 188, dated 15th February 1869, one or two instalments of the advance sanctioned for him for building a house, he will be allowed to draw the remaining portion of the advance.

* Madras G. O. G. No. 77, dated 2nd March 1869, page 43.

Reliefs—Regtl. Establishments.

G. O. C. C. No. 61 of 8th June 1870.—Under instructions from Government, the Commander-in-Chief directs the attention of Officers Comanding Forces, Regiments or Batteries on occasions of the movement of European Troops in relief, to the provisions of the following para. of a letter No. 847, dated 19th January 1870, from the Government of India, which is to be acted up to as most conducive to the public interest :—

Para. 4. * * * * "When a Regiment "proceeding to England is relieved by another Regiment "from England, the Regimental Establishments, both Quar-"ter Master's and Hospital, should be kept on pay, until

"the arrival of the latter Regiment, to which they will be "transferred. When a Regiment is relieved by another "from the Madras or Bombay Presidency, the Establish- "ments belonging to those Presidencies should either re- "main there, or be returned as soon as possible, for the use "of the Regiment coming from England, the Regiment "from Madras or Bombay taking up the Establishments "left behind by the Regiment leaving Bengal."

Medical Department—Subordinate.

No. 100.

In continuation of *G. O. No. 203 of 1869, it is hereby notified, under instructions from the Government of India, that passed native medical students are not to be posted to Civil Dispensaries except on requisitions from Deputy Inspectors-General of Hospitals or Circles, (after communication with the civil authorities,) which shall be held to be sufficient authority for issuing the necessary Division or District orders.

*Madras G. O. C. C. 29th September 1869, page 252.

Discipline—Medical Department.

No. 123.

It has lately been brought to the notice of the Commander-in-Chief in India, that a Medical Officer in charge of a regiment has reported matters of discipline connected with the Medical Subordinates attached to the corps, to the superior medical authority on the spot, who is powerless to take action in such cases; and has neglected to make any report of the occurrences to his Regimental Commanding Officer.

2. The Commander-in-Chief desires it to be pointed out, that this course must necessarily occasion delay in the final settlement of such cases. It is the duty of a Medical Officer to bring all matters of this nature, in the first instance, to the notice of his Commanding Officer, under whose immediate orders the Medical Subordinates are serving, and who is held responsible for the discipline of all under his command.

Lock Hospitals.

No. 125.

With reference to the selection of Medical Officers for the charge of Lock Hospitals at military stations, it has been decided by the Government of India in the Military department, that Medical Officers shall be selected for this duty by Commanding Officers of stations, on the recommendation of the Deputy Inspector-General, or other superior medical authority of the Indian Forces of the Circle, and that such nominations shall be forwarded under the countersignature of the General Officer commanding the division or district, for the confirmation of the local Government.

2. In selecting an Officer for the post, regard should be had not only to the military and regimental qualifications of the candidate, but also to his acquaintance with the language and customs of natives of the country. A Medical Officer, who has not passed in the colloquial, should not be nominated to such a charge, when a suitable Officer who has passed is available; but when such a nomination is made, the nominee must engage to pass within six months, or failing to pass in that time, he will be remanded to his regiment.

Madras Medical Fund.

Retirement.

Deputy Inspr.-Genl. J. H. Orr, C.B., M.D., from 12th November 1870.

List of Wives.

On account of whom Payments have been notified (by the receipt of Paymasters' Statements, &c.) from 29th October 1870 up to this date, for securing the following rates of Pension.

Subscriber's Name.	Date of Marriage.	Rate of Pension secured.	Payment how made.
C. Robertson..	23rd August 1870.	3-4ths.	By Donation & Subscription

List of Children.

On account of whom Payments have been notified (by the receipt of Paymasters' Statements, &c.) from 29th October 1870, *up to this date, for securing the following rates of Pension.*

Subscribers' Names	Children's dates of birth.	Sex.	Rate of Pension secured.	To what period.	Payments how made.
R. W. Cockerill...	26th Sept. 1870...	Female...	Full ...	To D. or M. &c.....	By Donation and Subscription.
J. Houston.....	16th Octr. 1870...	Male ...	do. ...	To 21 years.....	By Donation.
J. C. Burton.....	23rd Sept. 1870...	Female....	do. ...	To D. or M. &c.....	

MEDICAL FUND OFFICE,
FORT ST. GEORGE,
28th November 1870.

CORRESPONDENCE.

A Statistical Committee.

To The Editor of the Madras Monthly Journal.

Sir,—I enclose an extract cut from the *Mail* some two or three months ago; it refers to the collection of statistics of disease, and demonstrates that I am not alone in my anxiety to see carried out that reform which I have advocated the advantage of and the necessity for.

If a few prominent members of the medical profession would present a really feasible scheme, Government would, I feel sure, give its most valuable and necessary assistance, in India particularly the Government could with but trifling expense collect the statistics referred to through its medical officers; but the details of such a scheme, to give the results the highest scientific value, should emanate from a committee of the most prominent members of the medical profession chosen irrespectively of their individual official position.

Action is what is really required in the matter. The first step taken, all the advice and assistance required would be forthcoming; the public justly look rather to the medical profession than to the Government for this first step.

Yours faithfully,

Dacca, *Nov.* 17, 1870. } John C. Douglass.

The Victims of Scarlet Fever.—We are about to make a statement which in its bare simplicity will, we venture to believe, strike all thoughtful persons as appalling. During the 21 years 1848 to 1868 there were registered in England and Wales 415,982 deaths from scarlet fever and its allied disease diphtheria. To bring this number down to the present time, exact *data* are not yet forthcoming, but the means exist for approximating fairly enough to the truth. Thus the registration accounts for 1869 are at present incomplete, but we know that 6,181 fatal cases were recorded in London during that year; and as the scarlet fever mortality is, if anything, rather less than greater in the metropolis by comparison with the rest of the country, it may be estimated on the basis of population that at least 40,000 deaths occurred throughout England last year. Curiously enough, we have fuller information about 1870 in consequence of the extension of the Registrar General's quarterly returns, which show that in the six months ending

June last 13,900 deaths were returned by the registrars as resulting from scarlet fever and diphtheria—a number which we suspect, however, to be under rather than over the mark. Here, then, we have an aggregate in round numbers of 470,000 persons who have fallen victims to one type of zymotic disease in the last 22½ years. Of these the loss is absolute, irretrievable. But what of those whom the disease atacked, but did not kill outright? Anything like an accurate estimate is out of the question, thanks to the supineness of past and present Governments, who have neglected so obviously important a branch of health statistics as is the record of sickness among the population. On the most moderate assumption as to the proportion of deaths to attack, it is probable that at least five millions of persons in England have, during the 22½ years, suffered more or less severely from attacks of scarlet fever and diphtheria. That a considerable number of these persons ultimately perished by other maladies, either induced by the original attack or supervening on a broken constitution, must undoubtedly be taken for granted. In fact, it is impossible to gauge the full extent of the mischief done where the ramifications are almost endless and frequently obscure. Nor can it be necessary to do more than point to the absolute slaughter of nearly half a million victims as a reason for the adoption of the most stringent measures against the culpable ignorance and criminal neglect alluded to in this journal of last week. Let it be remembered that 62 per cent. of the victims are children five years of age, who are incapable of taking steps for their own preservation, and who have therefore the strongest of all claims upon the protection of the State.—*British Medical Journal.*

Dieulafoy's Aspirator.

To the Editor of the Madras Monthly Journal.

Sir,—Allow me to draw the attention of the profession in this Presidency through the medium of your Journal to "Dieulafoy's Aspirator."

It is an instrument intended to empty deep-seated collections of fluid and at the same time to prevent access of air to them. It answers the purpose admirably. I first saw it in use at Netley in the hands of Dr. Maclean who with it, in my presence, tapped an abscess of the liver with great ease and success and little or no pain to the patient.

I used it the other day at the General Hospital on a patient of Dr. Chipperfield's, withdrawing from the liver of a Mussulman 10 to 12 ounces of pus and the man is now walking about comparatively well.

For abscesses of the liver its use seems to me invaluable. It would be equally useful for any deep abscesses or collections of fluid.

I shall be most happy to shew it and its modus operandi to any Medical Officer at the Eye Infirmary any morning.

I am, Sir, yours obediently,

M. C. FURNELL, *Surgeon,*
Ag. Supt. Eye Infirmary.

MADRAS,
Nov. 25, 1870.

TO CORRESPONDENTS.

MR. R. E. PEARSE.—*In our next.*

MR. J. NORTH.— *Do.*

BOOKS, &c. RECEIVED.

Report on Vaccination, Madras, 1868.

Returns of Vaccination N. W. P., 1869-70.

The Overland Ceylon Observer, *Nov.* 1.

Indian Medical Gazette, *November.*

Adelphi Press Calendar, 1871.

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